CALIFORNIA
FIRE WEATHER ANNUAL
OPERATING PLAN

2014

CALIFORNIA ANNUAL OPERATING PLAN 2014

I. INTRODUCTION

A. The California Fire Weather Annual Operating Plan (AOP) constitutes an agreement between the California Wildfire Coordinating Group (CWCG) comprised of State, local government and Federal land management agencies charged with the protection of life, property and resources within the State of California from threat of wildfire; and the National Weather Service (NWS), National Oceanic and Atmospheric Administration, U.S. Department of Commerce, charged with providing weather forecasts to the Nation for the protection of life and property.

The AOP provides specific procedural and policy information regarding the delivery of meteorological services to the fire management community in California. The NWS and CWCG work closely in all phases of the fire weather forecast and warning program to resolve concerns and avoid potential inconsistencies in products and services prior to delivery to fire agency customers. The goal of all agencies is to maximize firefighter and public safety through a coordinated delivery of consistent services.

Fire protection within California is made efficient by the statewide exchange among Federal, State, and local agencies of their responsibilities for the protection of certain lands. Non-federal wildland fire management agencies are by agreement protecting Federal lands, and therefore, require NWS fire weather forecasts and warnings. It is essential that all fire protection agencies receive coordinated fire weather and fire danger services.

B. Roles and responsibilities of the NWS and the interagency fire management community are set forth in the following reference documents:

- Interagency Agreement for Meteorological Services Among the Bureau of Land Management, Bureau of Indian Affairs, U.S. Fish and Wildlife Service, and National Park Service of the U.S. Dept. of Interior, the Forest Service of the U.S. Dept. of Agriculture, and the National Weather Service of the U.S. Dept. of Commerce (National MOA or National Agreement);
- CWCG – NWS California Fire Weather Program Assessment Team Charter;
- National Weather Service NWSI 10-4: Fire Weather Services ;
- 2014 National Mobilization Guide ;
- 2013 California Mobilization Guide ;
- National Predictive Services Handbook; and
- NWCG Glossary

C. Participating agencies include the following:

- Federal, State and local fire agencies comprising the California Wildfire Coordinating Group (CWCG);
- The NOAA/National Weather Service offices serving California
- Representatives from independent city/county fire agencies.

CHANGES AND UPDATES FOR 2014

- The NWS WFOs may use social media and other tools including Twitter, Facebook, YouTube, Weather Stories and webinars to engage the public and our partners in conversation around important weather, water, and climate issues. At times, fire weather concerns may be addressed through these venues, in addition to other already established means. Please refer to your local office's individual section, or contact the office directly, for details on how these tools are used locally.

NWS Fire Weather Planning Forecasts

NWS Fire Weather Planning Forecasts provide general, information for daily preparedness and planning purposes. Forecasts are subdivided into meteorologically and topographically similar forecast areas called zones. Because of their more generalized information, planning forecasts are never to be used as a spot forecast. The table below outlines issuance times of planning forecasts for each NWS office. The beginning and ending date of high season forecast issuances vary by year, depending on weather and fuel conditions.

Weather Forecast Office	High Season Narrative Forecasts	Morning Narrative Forecast NLT	Afternoon Narrative Forecast NLT	Low Season Narrative Forecasts NLT	NWS Forecast Zones
Extreme Northern California – Medford	*Usually by June 1 to October 1 #*	7:30 a.m.	3:30 p.m.	Daily 7:30 a.m.	280-282, 284, 285
Northwest California – Eureka	*Usually by June 1 to November 1 #*	7:30 a.m.	3:30 p.m.	Daily 7:30 a.m.	201-204, 211, 212, 276,277, 283
North Central California – Sacramento	*User driven, but usually by June 1 to November 1 #*	7:30 a.m.	3:30 p.m.	Daily 7:00 am.	213-221, 263, 264, 266-269, 279
Extreme Eastern California – Reno	*Usually by June 1 to November 1 #*	7:30 a.m.	3:30 p.m.	Daily 7:00 a.m.	270-273, 278
Central Coast California – San Francisco Bay Area/Monterey	*Usually by June 1 to November 1 #*	7:00 a.m.	3:30 p.m.	Daily 3:30 p.m.	006, 505-513, 516-518, 528-530
Central California Interior – San Joaquin Valley/Hanford	*Usually May 15 to November 15 #*	7:00 a.m.	3:30 p.m.	Daily 3:00 p.m. PST or 3:30 p.m. PDT	289-299
Southwest California – Los Angeles/Oxnard.	*Usually May 15 to December 1 #*	9:30 a.m.	3:30 p.m.	M-F 3:30 p.m. also M at 9:30 a.m. *	234-241, 244-246, 251-254, 259, 288, 547,548
Extreme Southwest California – San Diego		7:00 a.m.	2:30 p.m.	Daily 7:00 a.m.	242, 243, 248, 250, 255-258 260-262
Southeast California – Phoenix		7:30 a.m.	3:30 p.m.	Daily 7:30 a.m.	230-232
Southeast California – Las Vegas		7:00 a.m.	3:30 p.m.	Daily 7:00 a.m.	226-229

** excludes Federal holidays*
 # Customer coordinated depending on weather/fuels; two weeks' notice preferred for NWS WFOs

Update/Corrected forecasts – Planning Forecasts are updated or corrected upon issuance of a Fire Weather Watch or a Red Flag Warning, when the current forecast does not adequately describe significant weather expected in the future, or when typographical/format errors prevent proper interpretation of the forecast.

Access – Planning Forecasts are widely available from the California Fire Weather Page (http://www.wrh.noaa.gov/sto/cafw/), NWS office web sites, and Predictive Services web sites. All NWS fire weather information can also be accessed from the NWS National Fire Weather Page at: www.weather.gov/fire. Forecasts are also available via WIMS.

Content and Format – Forecasts follow the national standard narrative format, per NWS Directive 10-401. Morning forecasts focus on the next 36 hours and afternoon forecasts on the next 48 hours, with general extended outlooks in both cases out to at least five days.

Planning Forecasts begin with pertinent headlines and a non-technical weather discussion. Headlines are included as needed for Red Flag Warnings and Fire Weather Watches. Headlines for critical fire weather conditions that do not meet Red Flag criteria are also included. Discussions should normally be no more than 8 lines in length. A detailed, technical weather discussion is available in the Area Forecast Discussion (AFD) product which can be found on each forecast office website.

Short-term forecast for the first 36 or 48 hours - Short-term forecasts emphasize information needed for initial attack and day-to-day fire management. Each forecast zone or zone grouping contains the following elements, listed in the order they appear:

- Headline(s) as appropriate
- Sky/Weather
- Temperature
- Relative Humidity
- Wind – 20-foot, 10 minute average RAWS standard (slope/valley and ridge top, as appropriate)
- Chance of Wetting Rain (CWR)
- Lightning Activity Level (LAL)

Forecasts may include the following optional elements based on local customer requirements:

- Haines Index
- Mixing Level or Mixing Height
- Marine Layer
- Transport Wind
- 10,000-foot Wind
- Ventilation Category (or numeric value)
- 24-hour Trends (of temperature and relative humidity)

Descriptions of forecast parameters can be found in Appendix A.

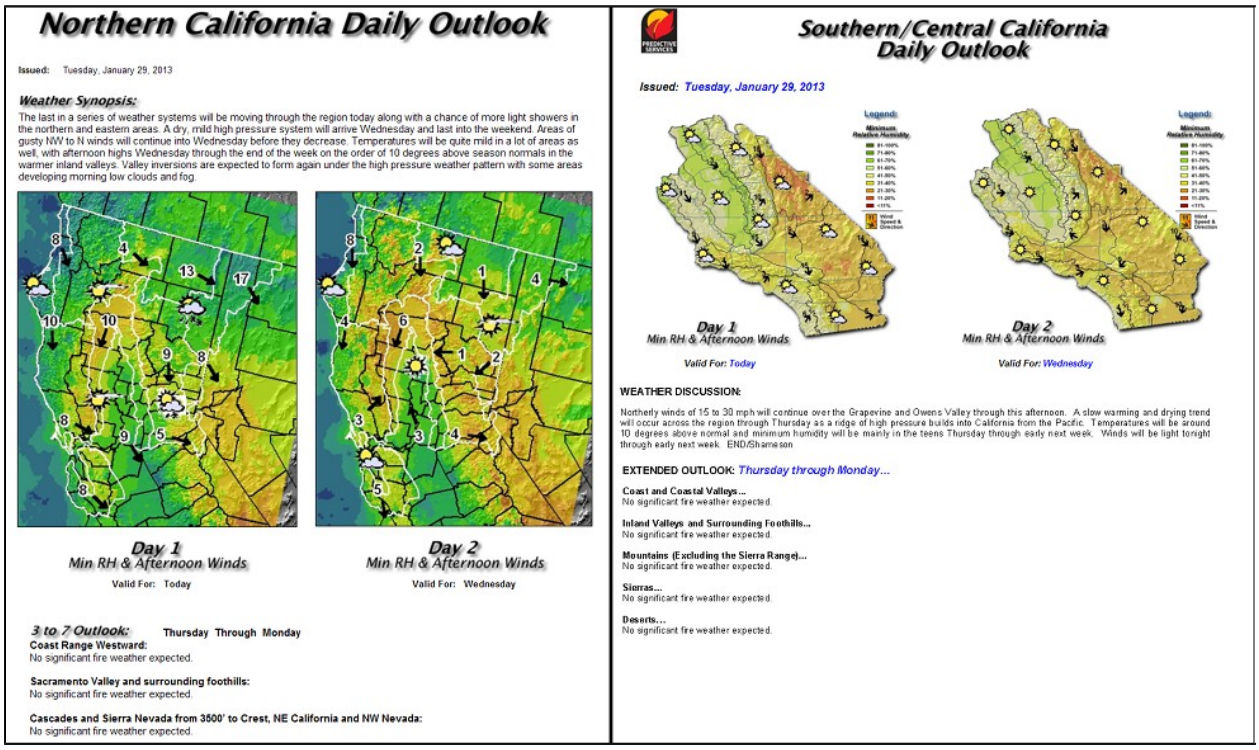
Extended Outlook - Beyond 36-48 hours, planning forecasts are used for resource planning. They contain general guidance information, keying on significant changes in temperature, humidity, wind, or weather needed for decision-making purposes.

Examples of NWS Fire Weather Planning Forecasts (FWF) can be found in Appendix B by clicking on the FWF header under the desired issuing office.

Daily Outlook

This product provides fire personnel with a quick-briefing tool for obtaining weather highlights for Days 1 and 2 in their Geographic Area. The GIS-based graphics in this product combine three predicted elements from the NWS national gridded database: minimum relative humidity, wind speed and wind direction. Daily weather symbols are then added by Predictive Services meteorologists, who also write a weather synopsis along with a 3 to 7 Day narrative outlook which highlights any anticipated significant fire weather for that period.

Issuance Schedule: South Ops 930 am Pacific Time and North Ops 1000 am Pacific Time. Issued daily during fire season, and M-F during low season.



Northern California Daily Outlook

Issued: Tuesday, January 29, 2013

Weather Synopsis:

The last in a series of weather systems will be moving through the region today along with a chance of more light showers in the northern and eastern areas. A dry, mild high pressure system will arrive Wednesday and last into the weekend. Areas of gusty NW to N winds will continue into Wednesday before they decrease. Temperatures will be quite mild in a lot of areas as well, with afternoon highs Wednesday through the end of the week on the order of 10 degrees above season normals in the warmer inland valleys. Valley inversions are expected to form again under the high pressure weather pattern with some areas developing morning low clouds and fog.

Day 1
Min RH & Afternoon Winds
Valid For: Today

Day 2
Min RH & Afternoon Winds
Valid For: Wednesday

3 to 7 Outlook: **Thursday Through Monday**

Coast Range Westward:
No significant fire weather expected.

Sacramento Valley and surrounding foothills:
No significant fire weather expected.

Cascades and Sierra Nevada from 3500' to Crest, NE California and NW Nevada:
No significant fire weather expected.

Southern/Central California Daily Outlook

Issued: Tuesday, January 29, 2013

Legend:
Minimum Relative Humidity
Wind Speed & Direction

Day 1
Min RH & Afternoon Winds
Valid For: Today

Day 2
Min RH & Afternoon Winds
Valid For: Wednesday

WEATHER DISCUSSION:

Northerly winds of 15 to 30 mph will continue over the Grapevine and Owens Valley through this afternoon. A slow warming and drying trend will occur across the region through Thursday as a ridge of high pressure builds into California from the Pacific. Temperatures will be around 10 degrees above normal and minimum humidity will be mainly in the teens Thursday through early next week. Winds will be light tonight through early next week. END/Shamason

EXTENDED OUTLOOK: *Thursday through Monday...*

Coast and Coastal Valleys...
No significant fire weather expected.

Inland Valleys and Surrounding Foothills...
No significant fire weather expected.

Mountains (Excluding the Sierra Range)...
No significant fire weather expected.

Sierras...
No significant fire weather expected.

Deserts...
No significant fire weather expected.

Product Links:

Northern California Daily Outlook:
http://gacc.nifc.gov/oncc/predictive/weather/DailyOutlook.html

Southern California Daily Outlook:
http://gacc.nifc.gov/oscc/predictive/weather/daily_product/DailyOutlook.html

Spot Forecasts

Spot Forecasts are detailed site-specific forecasts issued for wildfires, HAZMAT incidents, prescribed burns, search and rescue operations, etc., and are made available upon request at any time. Spot forecasts are available to any federal, state, or municipal agency as described in NWSI 10-401. *When smoke dispersion/smoke management is a concern, spot forecasts for prescribed burns may be requested from the PSU at Redding or Riverside at these locations.*

North: http://gacc.nifc.gov/oncc/predictive/weather/spot/index.php
South: http://gacc.nifc.gov/oscc/predictive/weather/daily_weather/spot_form.doc

Spot forecast information is perishable. Using up-to-date spot forecasts is important and the requested issuance time for spot forecasts should be within a few hours of when the forecast will be used. NWS Spot forecasts are normally not produced more than 48 hours in advance. More than 48 hours in advance, other planning information is available to fire agencies, including the Fire Weather Planning Forecast and digital planning tools available on NWS web pages. These tools can be used for planning up to seven days out to identify time periods during which weather for a prescribed burn or other project is favorable. A list of these planning tools is available here. Please contact your NWS office for more information.

NWS spot forecasts are normally available within 30-60 minutes of the request, with wildfire and other urgent safety related requests having highest priority. If possible, non-urgent spot forecast requests for prescribed burns and similar projects should be made with as much lead time as possible. Requests made in the afternoon or evening for delivery of a prescribed burn spot forecast the following morning is a recommended practice.

If more than a 4-6 hour project delay occurs – particularly if there is anything in the forecast or in observed conditions which raises concern – the requestor should call their NWS office and discuss the forecast with a meteorologist. It is critical to have a working phone number from the requesting agency so they can be contacted by the NWS if needed.

Requesting a Spot Forecast: Spot forecasts are normally requested and received via the internet from the California Fire Weather web page, the national NWS Fire Weather web page, all NWS forecast office fire weather web pages and both California PSU web pages. If internet access is not available, spot forecasts may be requested and disseminated via phone or fax using the backup spot forecast request form found in Appendix E. Fire agencies will confirm receipt of a spot forecast with a phone call to the issuing NWS forecast office.

At or before the time of a spot request, the requesting agency must provide information about the location, topography, fuel type(s), elevation(s), size, ignition time, and a contact name(s) and telephone number(s) of the responsible land management personnel. Also, quality representative observation(s) at, or near, the site of the planned prescribed burn, or wildfire, should be available to the NWS along with the request for a spot forecast(s).

In the initial attack phase of a new wildfire that presents an immediate threat to firefighters and/or the public (such as an urban interface fire in critical fuels and

weather), the NWS may be called directly for a quick verbal briefing prior to a formal spot forecast issuance as time/communications allow. Please discuss this option with your local NWS office.

Upon completion, spot forecasts are posted to the appropriate Fire Weather Page of the NWS forecast office web site that received the request. NWS web sites may be linked from the Individual Forecast Information Table.

Content and Format – National standard content and format for NWS spot forecasts can be found in NWS Directive 10-401. At a minimum, wildfire spot forecasts always include this content: headlines (when RFW in effect or other significant weather is headlined in the planning forecast), discussion, sky/weather, (max/min) temperature, (max/min) relative humidity, and 20-foot wind.

Additional elements, such as transport winds, mixing height, LAL, etc., may be included upon request using the check boxes and "Remarks" section of the NWS Spot online form.

The forecast period is based on user request and will contain up to three periods, such as "TODAY", "TONIGHT", and "FRIDAY." If requested and if enough weather information is received to make it feasible, a more specific first period such as "AT 11 A.M. IGNITION" may be used. In these cases, the meteorologist will not just forecast for the planned ignition time, but will include significant changes expected in the forecast parameters for the rest of the usual period, e.g., 11 AM temperature and the expected daytime maximum temperature.

When requested, an outlook for a longer duration will be appended, such as "OUTLOOK FOR WEDNESDAY THROUGH FRIDAY" for a spot requested on Monday.

Spot forecasts are considered one-time requests and are not updated unless the following procedures are used:

Scheduled Spot Forecast Update Requests –

- For wildfires and other high impacts incidents: Scheduled updated spot forecast requests, such as for an upcoming shift briefing, should be submitted to the NWS at least two hours before being needed.

- For prescribed burns and other non-urgent projects: Scheduled updated spot forecast requests should be made with as much lead time as possible. For a long-term project, a spot forecast update schedule provided to the NWS will help that office provide the best spot forecast service.

Unscheduled Spot Forecast Requests –

- Forecasts for unscheduled updates for prescribed burn spots, either due to a specific request based on weather at the site or due to monitoring invoked by the phrase, "Request Priority Monitoring" or similar in the remarks section of the spot forecast request, will be issued as soon as possible and no longer than two hours after it is recognized that an update is desirable. In this case the NWS may send an updated spot forecast without a formal request if the meteorologist has been made aware that monitoring is desired, and the meteorologist determines that the current forecast does not adequately represent current or expected weather conditions which might affect the

project.

As with all NWS products, spot forecasts are corrected when a typographical or format error prevents correct interpretation of the forecast. Corrected forecasts are delivered to agencies in the same manner as the original spot forecast.

Spot Forecast Feedback - Requesting agencies should always provide fire-line weather observations for the validation of weather forecast accuracy back to the NWS. For further explanation of the Feedback process, please go to Fire Weather Observations.

HYSPLIT Plume Trajectory Assistance – Automated HYSPLIT plume trajectory output is available with any spot forecast request and can be useful as a tool to help with smoke plume forecasting. The HYSPLIT Trajectory model provides automated trajectory guidance for air parcels at a given height above ground level.

To utilize this feature, simply add the phrase, “HYSPLIT to” and your email address into the remarks section of a spot request, such as “HYSPLIT to joe.cool@web.address” (Any email address works).

When the run is complete, you will receive an email with output that consists of a table of values, a gif HYSPLIT trajectory map, and a KMZ trajectory map for loading into Google Earth. This email is separate from the actual spot forecast. Please note that automated HYSPLIT output does not take into account information on burn size or fuels and generates air parcel trajectory forecasts for 500, 1500, and 3000 meters AGL and does not incorporate any fire plume height data.

For more information on HYSPLIT and how to interpret the output, please contact your local NWS fire weather program leader.

IMET Incident Response

In addition to following direction in the National Mobilization Guide, the following direction is clarification for the Geographic Area Coordination Centers (GACC) in California:

When an IMET is requested for an incident, **the request will be placed to the GACC.** The GACC will notify the National Fire Weather Operations Coordinator (NFWOC) at NIFC at 1-877-323-IMET (4638).

The GACCs will maintain a list of qualified IMETs and trainees in the Resource Ordering and Staffing System (ROSS) by Weather Forecasting Office (WFO) identifier, and provide dispatching services for the NWS in California. This list will be updated annually based on the list that is published in the California Fire Weather Annual Operating Plan. IMETs will be dispatched by the GACCs in California just as if they are GACC employees.

When the NFWOC determines who will fill the incident request, the information will be relayed back to the GACC. If the IMET is within the requesting GACC, the IMET will be mobilized using ROSS.

If the IMET is in the California GACC that is not hosting the incident, the request will be placed through Selection Area to the other GACC.

If the identified IMET is not in a California WFO, the IMET request will be edited to add a Name Request and placed up to NICC who will place the request to the appropriate GACC.

The following list designates which California GACC will status and dispatch personnel for the California WFOs. Status can be maintained available/Local until requested to reduce work:

Redding PS	**Riverside PS**
Eureka WFO	Hanford WFO
Sacramento WFO	Los Angeles/Oxnard WFO
San Francisco/Monterey WFO	San Diego WFO

IMET personnel from Medford WFO, Reno WFO, Phoenix WFO and Las Vegas WFO shall be requested through NICC to their respective GACC using a Name Request.

The procedures for requesting IMETs will follow the guidelines outlined in the National Interagency Agreement, Administrative Procedures section of the current National Mobilization Guide, Personnel section of the current California Mobilization Guide, and CALFIRE Procedure No. 302. Note that for non-Federal incidents, such as a CALFIRE or local government fire, the requesting agency may order an IMET from either the NWS or the North Ops Predictive Services unit to support their Incident meteorological needs.

The following information will be provided to the requested IMET:

- Name of fire
- Location of fire

- Directions to location where the IMET is to report and location of Incident Base.
- Name of Incident Commander, Plans Chief, and Fire Behavior Analyst, if available.
- Request and Resource Order number for IMET

Additionally, the user agency is responsible for providing adequate shelter to allow the equipment and fire weather meteorologist to function efficiently. This would include a location that is free of excessive dust, heat and moisture, protection from wind and other elements, table, and chair. Transportation and shelter arrangements should be made at the time of request; 120 volt AC power is desirable.

The following is a list of IMETs, and All-hazard Meteorological Response System (AMRS) in the Northern and Southern California Area:

Northern and Southern California Area IMETs: (T) designates a trainee

NWS IMETs:

Location	Name	Agency	ROSS Unit ID
Eureka, CA	Jeff Tonkin	NWS	CA-EKAW
	Alex Dodd (T)	NWS	CA-EKAW
Hanford, CA	Dan Harty	NWS	CA-HNXW
	James Dudley (T)	NWS	CA-HNXW
Las Vegas, NV	Jim Harrison	NWS	NV-VEFW
	Andy Gorelow (T)	NWS	NV-VEFW
Medford, OR	Frederic Bunnag	NWS	OR-MFRW
	Brett Lutz	NWS	OR-MFRW
	Shad Keene (T)	NWS	OR-MFRW
Monterey, CA	Ryan Walbrun	NWS	CA-MTRW
	Matt Mehle	NWS	CA-MTRW
Oxnard, CA	Rich Thompson	NWS	CA-LOXW
Phoenix, AZ	Valerie Meyers	NWS	AZ-PSRW
Reno, NV	Alex Hoon	NWS	NV-REVW
	Jim Wallmann	NWS	NV-REVW
Sacramento, CA	Jason Clapp	NWS	CA-STOW
	Mike Smith	NWS	CA-STOW
San Diego, CA	Stefanie Sullivan	NWS	CA-SGXW

Predictive Services IMETS (State, Local, or Unified Command Incidents):

Redding, CA	John Snook	USFS	CA-ONCC
	Basil Newmerzhycky	USFS	CA-ONCC
	Brenda Belongie	USFS	CA-ONCC
	Steve Leach (T)	BLM	CA-ONCC

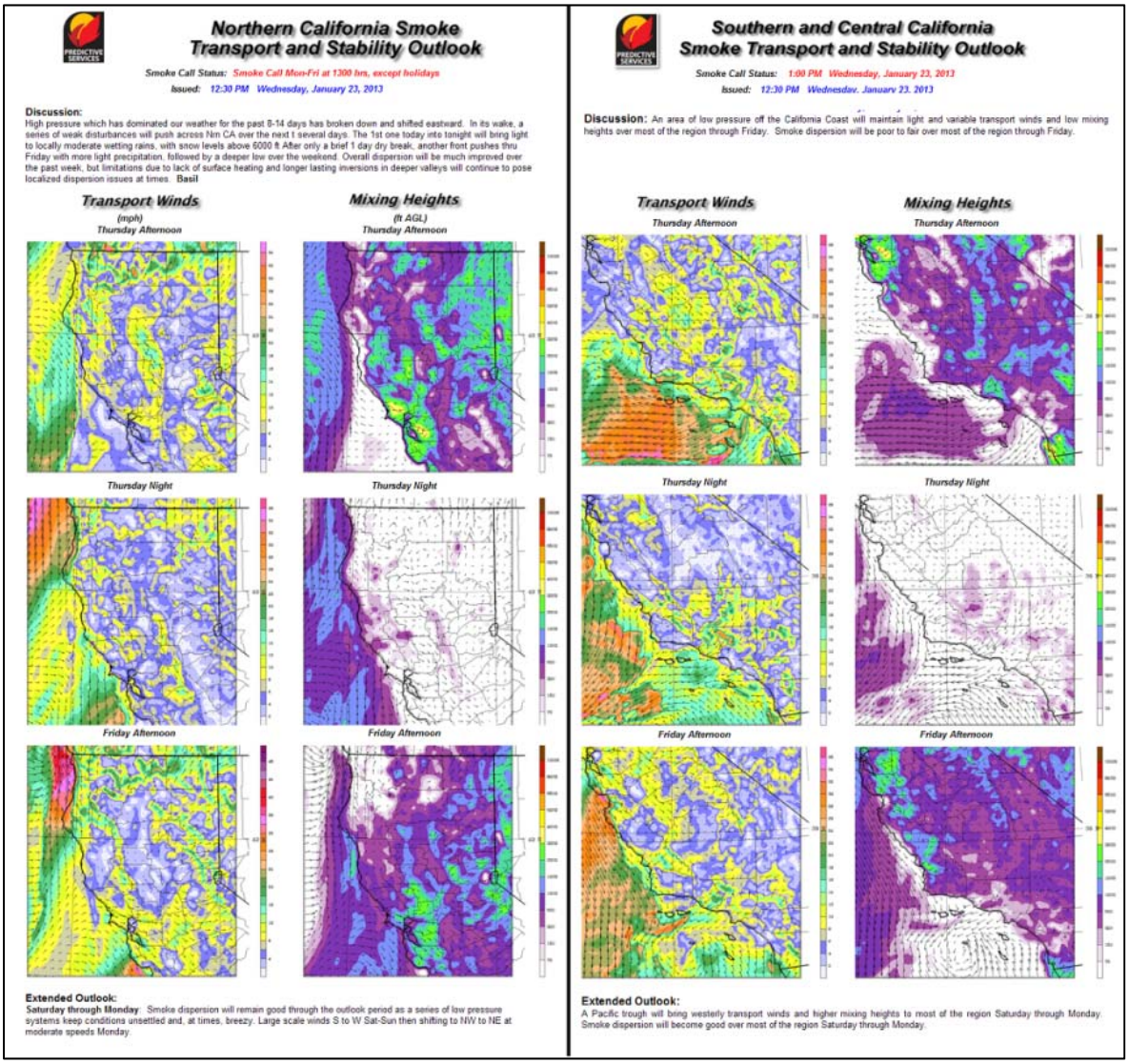
AMRS Cache Sites

Each NWS office serving California has at least one AMRS.

Smoke Management

The ***Smoke Transport and Stability Product*** provides burners, and all other interested parties with a high resolution graphical display of *Transport Winds* (horizontal dispersion) and *Mixing Heights* (vertical dispersion), as well as an overall narrative describing general weather patterns, with an emphasis on smoke dispersion. An extended forecast describes expected large scale weather conditions for the 3-5 day period, again with an emphasis on smoke dispersion. At the top in red font is the Smoke Call Status, listing the next ***Daily Smoke Call***. This is a conference call hosted by Predictive Services and the California Air Resource Board, along with various participants on the federal, state, and local level interested in discussing burning conditions and air quality based burn allowances across the state.

Issuance Schedule: Issued 1230 pm PT…..Issued daily during fire season and M-F during low season.



Product Links:

Northern California Smoke Transport and Stability Outlook:
http://gacc.nifc.gov/oncc/predictive/weather/daily_smoke/Smoke.html

Southern California Smoke Transport and Stability Outlook:
http://gacc.nifc.gov/oscc/predictive/weather/daily_smoke/Smoke.html

Red Flag Program

Fire Weather Watches and Red Flag Warnings are issued when the combination of fuels and weather conditions support extreme fire danger and/or fire behavior.

A *Fire Weather Watch* is used to alert agencies to the high potential for development of a Red Flag event in the18-96 hour time frame. The Watch may be issued for all or selected portions of a fire weather zone or zones.

A *Red Flag Warning* is used to inform agencies of the impending or occurring Red Flag conditions. A Red Flag Warning is issued when there is high confidence that Red Flag criteria will be met within the next 48 hours or less or criteria are already being met. Longer lead times are allowed when confidence is very high or the fire danger situation is critical. The Warning may be issued for all or selected portions of a fire weather zone or zones.

Fire Weather Watch and/or Red Flag Warning headlines are included in all affected forecasts. All NWS fire weather web pages also highlight any watch and/or warning issuances.

Format and Contents - A bullet format text message (RFW) is used for issuing, updating, and cancelling all Fire Weather Watches and Red Flag Warnings. Complete information regarding the format, content and examples of Fire Weather Watches and Red Flag Warnings can be found here: http://www.nws.noaa.gov/directives/sym/pd01004001curr.pdf

NWS offices normally call affected dispatch offices when Red Flag Warnings and Fire Weather Watches are issued or updated. Watches and Warnings are also available on the internet via the California Fire Weather web page, the web site(s) of the issuing NWS office(s), the NWS National Fire Weather Page and (www.weather.gov/fire) and from WIMS.

If the issuance of a Red Flag Warning or Fire Weather Watch requires an update of the forecast, the NWS office will verbally notify the Redding and Riverside PSUs as soon as possible. During non-duty hours for the PSUs, contact the GACC Coordinator on Duty (COD) as available.

Fire Weather Watches and/or Red Flag Warnings from NWS offices are normally issued only after, 1) an accurate assessment of fuel conditions has been determined (see “Qualifying Fuels Information” section), and 2) conferring with affected agencies, including the GACC Predictive Services Units. The final authority for the issuance of a watch/warning rests with the NWS forecaster.

Watch/Warning Fuel Requirements:

Live and/or dead fuels are sufficiently receptive (dry) so that fire starts from any cause may become an initial attack problem for fire agencies in the Fire Weather Zone(s) impacted. Fuel dryness/receptiveness should be determined by the following methods, in ranking level of importance:

- The local Fuels Management Officer (FMO) determines fuels are dry enough in the (portions of) Fire Weather Zone(s) to constitute an initial attack problem.

- High to Extreme Fire Danger as determined by the local fire management agency.

- The Fuel Dryness Level of the Geographical Area Coordination Center (GACC):

Northern California - The Fuel Dryness Level 7 Day Fire Potential Matrix in a brown or yellow category for the (portions of) Fire Weather Zone(s) expected to be impacted. If the fuel dryness level in the chart is green, the forecaster must determine if there will be an initial attack concern due to fuel dryness over all or part of the Fire Weather Zone or Zones. In rare cases, fuels may be or, may be becoming, too wet for an imminent large fire concern for the GACC, but are still dry enough, or dry enough for long enough, to be an initial attack concern.

Southern California – In addition to the 7 Day Fire Potential Matrix, the Predictive Services Unit in Riverside produces a written discussion on fuel status across southern California every other Thursday during fire season. This discussion is based on input from the fire community and includes a brief description of the current status of the live and dead fuel moistures, including green-up/curing information, as well as expected fuel conditions over the next seven days. The Fuels Discussion can be found at: http://gacc.nifc.gov/oscc/predictive/fuels_fire-danger/myfiles/Fuels_Discussion.pdf

- **Non Desert:** When a fuel condition of "Dry" (yellow) or "Very Dry" (brown) is displayed on the matrix for any Predictive Service Area (PSA), the "fuels switch" will be considered "on" for that day. A RFW is NOT recommended for any PSA designated as "Moist" (green).

- **Desert** (excluding the lower Colorado River Valley)**:** During dry winters and the spring curing season, fuel moistures **over the deserts** may be quite low without initiating serious concerns about the potential for large fire growth. Reasons include light fuel loading and/or discontinuous fuel, or the existence of dry fine fuels when larger live fuels remain relatively green. The Southern California GACC PSU will coordinate with affected WFOs to clearly communicate fuel conditions, and provide updates regarding spatial trends and changes in large fire potential, despite a "Very Dry" (brown) display on the associated PSA matrix.

The NWS should refer to this online document as the primary source of fuels information along with the National Fuel Moisture Database located at: http://www.wfas.net/index.php/national-fuel-moisture-database-moisture-drought-103, but may look at other sources for fuels information.

Watch/Warning Weather Criteria:

Abundant and/or Dry Lightning

Area Description	NWS Fire Weather Zones	Criteria
Northern California West of the Cascade/Sierra Crest	006, 201-204, 211-213, 215-221, 263, 264, 266-269, 276, 277, 279-283,	Abundant lightning (scattered [25%] areal thunderstorm coverage or greater) in

Eastern Sierra, Northeast CA **Lake Tahoe Basin**	284, 505-513, 516-518, 528-530 214, 270-271,273, 278, 284,285 272	conjunction with sufficiently dry fuels (fuels remain dry or critically dry during and immediately following a lightning event). Warnings may be issued for isolated events (<25% areal coverage) when little or no precipitation is expected to reach the ground.
Southern California desert area excluding the Lower Colorado River Valley **Lower Colorado River Valley** **Antelope Valley and SE Kern County Deserts** **Central California Interior** **Southern California Excluding the Antelope Valley** **Extreme Southern California**	226-228, 230, 232, 260-262 229,231 298, 299, 259, 289-297 234 - 241, 244, 245, 246, 251 - 254, 288, 547, 548 242, 243, 248, 250, 255-258, 260, 261, 262	A lightning event that is not accompanied by enough precipitation to significantly wet fuels that have been identified as critically dry. Significant precipitation is defined as ranging from .05 inches for grass or brush fuels to .15 inches for closed-canopy timber/heavy fuels. Fire Weather Watches and Red Flag Warnings will be issued for high impact lightning events in receptive fuels. Isolated events or events of short duration (i.e., events which start dry but become wet within an hour or two) do not need warnings but will be headlined in the forecast.

Wind and/or Low Humidity

Area Description	NWS Fire Weather Zones	Criteria
Southern California desert area excluding the Lower Colorado River Valley	226-228, 230, 232, 260-262	Relative Humidity ≤ 15% and wind gusts ≥ 35 mph for 6 hours or more, assuming fuel conditions are critical.
Lower Colorado River Valley	229,231	Relative Humidity ≤ 15% with sustained winds ≥ 20 mph or wind gusts ≥ 35 mph for 3 hours or more.
Antelope Valley and SE Kern County Deserts	298, 299, 259	Relative Humidity ≤ 15% and sustained (20-foot) winds ≥ 25 mph for a duration of 8 hours or more.
Central California Interior (WFO Hanford)	289-297	RAWS sustained winds ≥ 25 mph or frequent gusts ≥ 35 mph AND Relative Humidity ≤ 15% for a duration of 6 hours or more. OR Relative Humidity ≤ 10% for a duration of 10 hours or more regardless of wind.
Southern California Excluding the Antelope Valley (WFO Los Angeles)	234, 235, 236, 237, 238, 239, 240, 241, 244, 245, 246, 251, 252, 253, 254,	RH ≤ 10% with sustained wind ≥ 15 mph or with gusts ≥ 25 mph for 6 hours or more.

	288, 547, 548	RH ≤ 15% with sustained wind ≥ 25 mph or with gusts ≥ 35 mph for 6 hours or more.
Extreme Southern California (WFO San Diego)	242, 243, 248, 250, 255, 256, 257, 258, 260, 261, 262	RH ≤ 15% with sustained wind ≥ 25 mph or with gusts ≥ 35 mph for 6 hours or more.
Northern California West of the Cascade/Sierra Crest	006, 201-204, 211-213, 215-221, 263, 264, 266-269, 276, 277, 279-283, Western 284, 505-513, 516-518, 528-530	Refer to Wind/RH RFW Decision Matrix for Northern California West of the Cascade/Sierra Crest on next page.
Eastern Sierra, Northeast CA (WFO Reno)	214, 270-271,273, 278	RH ≤ 15% with wind gusts ≥ 30 mph for 3 hours or more.
Northeast CA excluding Surprise Valley (WFO Medford)	Eastern 284, 285	≤ 15% with wind gusts ≥ 30 mph for 3 hours or more. OR Daytime Min RH ≤ 10% with wind gusts ≥ 20 mph for 3 hours or more.
Lake Tahoe Basin	272	Relative Humidity ≤ 20% with wind gusts ≥ 30 mph for 3 hours or more. If fuels are at extreme levels: wind gusts ≥ 30 mph for 3 hours or more, regardless of Humidity.

Wind/RH Decision Matrix for Northern California West of the Cascade/Sierra Crest

- Matrix assumes daytime 10-hour fuel moisture (NFDRS obs time) is ≤ 6%, annual grasses have cured, and no wetting rain (greater than 0.10 inch) has fallen in the past 24 hours.
- The sustained wind refers to the standard 20-foot, 10 minute average fire weather wind speed.
- The wind event should be expected to last for at least 8 hours to qualify for a Red Flag warning. [This guidance was developed for Foehn wind events, which normally exceed 12 hours duration, and may last as long as 3-5 days].
- A **'W'** in the matrix indicates that a Watch or Warning should be considered.

Relative Humidity	**Sustained Wind 6-11 mph**	**Sustained Wind 12-20 mph**	**Sustained Wind 21-29 mph**	**Sustained Wind 30+ mph**
Daytime Minimum RH 29-42% and/or Nighttime Maximum RH 60-80%				**W**
Daytime Minimum RH 19-28% and/or Nighttime Maximum RH 46-60%			**W**	**W**
Daytime Minimum RH 9-18% and/or Nighttime Maximum RH 31-45%		**W**	**W**	**W**

Daytime Minimum RH < 9% and/or Nighttime Maximum RH < 31%	**W**	**W**	**W**	**W**

7-Day Significant Fire Potential Product

The 7-Day Significant Fire Potential product is a forecast of potential significant fire activity across the Geographic Area through the next seven days based on expected weather and fuel conditions. A “Significant” or “Large” Fire” is defined by size, generally ranging from 50-500 acres depending on the Predictive Service Area. The product contains a table displaying fuel dryness and, when appropriate, significant weather triggers. The product also contains a narrative section consisting of a weather synopsis, a fire potential discussion, and a resource capability summary as defined in the California Mobilization Guide.

1) Fuel Conditions or Fuel Dryness

Fuel Dryness is a function of the Energy Release Component (ERC) combined with either the ten hour (F10) or the one hundred hour (F100) dead fuel moisture. These indices have been correlated to historical fire activity to form three categories of Fuel Dryness, displayed by the following colors in the product:

- Green (Moist Fuels) – Little if any threat for large fires.
- Yellow (Dry Fuels) – Low threat for large fires when a Significant Weather Trigger is absent.
- Brown (Very Dry Fuels) – Moderate threat for large fires when a Significant Weather Trigger is absent.

2) Significant Weather Triggers

Significant Weather Triggers are weather events that either start new fires (Ignition Trigger), or provide favorable conditions (Burn Environment) for rapid growth to occur on existing fires when combined with “Dry” or “Very Dry” fuel conditions. The following is a list of Significant Weather Triggers used in the product.

- Lightning
- Windy and dry
- Unseasonably hot and dry
- Unstable

3) High Risk Day

High Risk Days are rare occasions when conditions exist that historically have yielded in a significantly higher than normal chance (>= 20%) for a new large fire or for significant growth to occur on existing fires. There are two conditions that would lead to the issuance of a High Risk Day: 1) Ignition Trigger or, 2) A Critical Burn Environment.

- (Red) – Ignition Trigger. Occurs when a “Dry” or “Very Dry” Fuel Dryness category coexists with lightning.
- (Orange) – Burn Environment. Occurs when a “Dry” or “Very Dry” Fuel Dryness category coexists with any of the Significant Weather Triggers other than lightning.

This product is issued by1030 local time. Predictive Services will notify the appropriate National Weather Service office(s) of the issuance of any High Risk Days.

<u>Webpage location:</u>

North: http://psgeodata.fs.fed.us/7day/action/forecast/10

South: http://psgeodata.fs.fed.us/7day/action/forecast/8

California - South Area 7 Day Significant Fire Potential

Issued: Wednesday, Jan 16, 2013

Parameters: None

Predictive Service Area	Tue Jan 15	Wed Jan 16	Thu Jan 17	Fri Jan 18	Sat Jan 19	Sun Jan 20	Mon Jan 21	Tue Jan 22
SC01 - Eastern Sierra								
SC02 - Central Sierra								
SC03 - Southern Sierra								
SC04 - Sierra Foothills								
SC05 - Central Valley								
SC06 - Central Coast Interior								
SC07 - Central Coast								
SC08 - South Coast								
SC09 - Western Mountains								
SC10 - Eastern Mountains								
SC11 - Southern Mountains								
SC12 - Lower Deserts								
SC13 - Eastern Deserts								
SC14 - Central Mojave								
SC15 - Upper Deserts								
SC16 - Northern Deserts								

Legend

Fuel Dryness

- Moist - Little or no risk for large fires.
- Dry - Low risk of large fires in the absence of a "High Risk" event.
- Very dry - Low/Moderate risk of large fires in the absence of a "High Risk" event.
- Data Unavailable.

High Risk Events

- W: Windy and Dry - Defined differently in each Predictive Service Area. See "Product Description and Explaination Page" for details.
- L: Lightning - Defined differently in each Predictive Service Area. See "Product Description and Explaination Page" for details.

Weather

Strong surface high pressure centered over southern Idaho will maintain offshore winds of 15 to 25 mph over the mountains and below the canyons and passes of Southern California through Thursday afternoon. This surface high will weaken causing north to east winds over Southern California to decrease to 10 to 20 mph Thursday night through early next week. A ridge of high pressure aloft currently off the West Coast will bring a slow warming trend and minimum humidity mainly in the single digits and teens to most of the region through early next week.

Fuels/Fire Potential

There will be little or no fire activity across the region through the forecast period.

Resources

CWCG Preparedness Level 2, MACS Mode 2

California - North Area 7 Day Significant Fire Potential

Issued: Wednesday, Jan 16, 2013

Parameters: None

Predictive Service Area	Tue Jan 15	Wed Jan 16	Thu Jan 17	Fri Jan 18	Sat Jan 19	Sun Jan 20	Mon Jan 21	Tue Jan 22
NC01 - North Coast								
NC02 - Mid Coast								
NC03A - Bay Area-Marine								
NC03B - Diablo/Santa Cruz Mtns								
NC04 - Northwestern Mtns								
NC05 - Sacramento Valley								
NC06 - Northeast CA								
NC07 - Northern Sierra								
NC08 - East Side								

Legend

Fuel Dryness

- Moist - Little or no risk for large fires.
- Dry - Low risk of large fires in the absence of a "High Risk" event.
- Very dry - Low/Moderate risk of large fires in the absence of a "High Risk" event.
- Data Unavailable.

High Risk Events

- D: dry
- W: wind
- H: hot
- U: unstable
- L: lightning
- R: recreation

Missing Stations

Weather

Strong high pressure will remain over Northern CA through early next week. Conditions will be dry as a general warming trend continues. Strong thermal belt conditions can be expected during nights and mornings, with inversions (and colder temperatures) forming in low spots, canyons and some valleys. A light surface NE-E wind will occur mostly in thermal belt locations west of the Cascade-Sierra crest, with the stronger winds (5-10 gusts 15-20 mph) during nights and mornings. Overnight RH recovery and afternoon RH will be low in these same areas. Beginning Tuesday the high pressure will move east of the area as a Pacific low pressure trough slowly approaches the coast and pushes clouds and humid air inland.

Fuels/Fire Potential

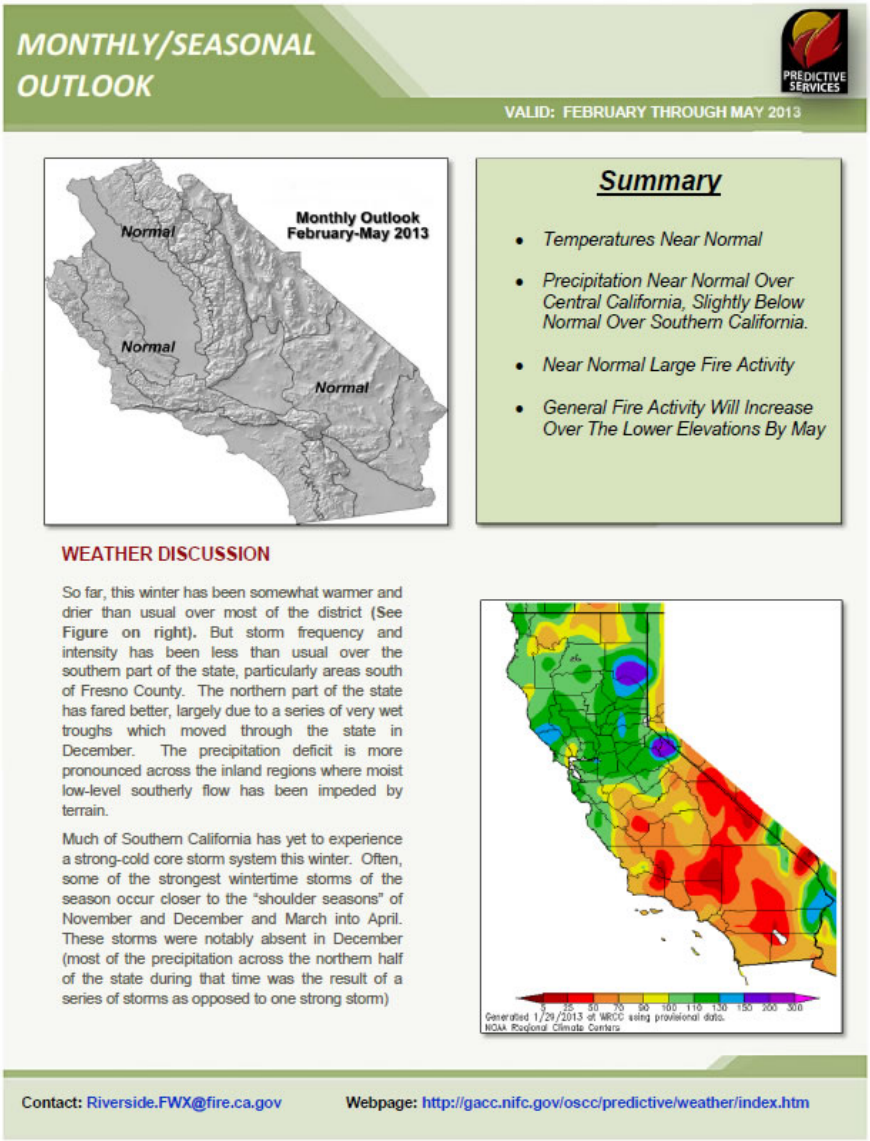
The dry breezy weather west of the Cascade-Sierra crest will allow dormant/dead fuels at lower elevations to gradually dry out. Although green grass exists in many locations, the DRY category is used in NC03B and NC05 to represent a higher probability that patches of continuous dry dormant/dead fuels could carry fire with the expected light winds. These same conditions likely exist on a smaller scale in NC02, NC03B, NC04 and the lower western portion of NC07.

Resources

National: Prepardness Level **1**
North OPS: Preparedness Level **1**
MACS Mode **1**

Monthly/Seasonal Outlook

This product combines all available meteorological, climate, fuels, and fire danger information to produce an outlook of large fire potential for the next 120 days. Forecast periods are broken down by month for the first two months with the last two months combined. Current and future trends of weather, fuel, and drought conditions are discussed to give context to the large fire potential outlook. When appropriate, areas of large fire potential and resource utilization, relative to normal will be overlaid on maps showing the Geographical Area. This product is issued year round, prepared a few days prior to start of the new month and posted on the website by the 1st.



Podcast/Webcast

Predictive Services produces a 3-4 minute audio/visual briefing describing weather, fuels, and fire potential information for the Geographic Area for the next 5 to 7 days. This product is produced by both Riverside and Redding, and issued by 9:30 am M-W-F during the winter and M-F during fire season.

South Ops:
http://gacc.nifc.gov/oscc/predictive/weather/myfiles/Podcast.html

Mobile Version…
http://gacc.nifc.gov/oscc/predictive/weather/myfiles/Mobile_Webcast.m4v

North Ops:
http://gacc.nifc.gov/oncc/predictive/weather/brief_files/brief.mp4

JOINT RESPONSIBILITIES

The National Weather Service (NWS) and the California Wildland Fire Coordination Group (CWCG) use a joint Fire Weather Program Assessment Team (FWPAT) to evaluate fire weather services in California. This team may make recommendations for improvements and/or changes to the program, and they also help ensure fire weather information is coordinated between agencies.

1. California Fire Weather Web Page and the Emergency Communication Center Dispatch Area (ECCDA) Forecast Summaries

An interagency fire weather web page for California is available at: http://www.wrh.noaa.gov/sto/cafw/. This web site serves as a portal for fire weather information for California, including links to fire weather forecasts, SPOT forecasts, current conditions, and much more.

Emergency Communication Center Dispatch Area (ECCDA) Forecast Summaries are also available from this web site. These simplified fire weather summaries are meant to be used for fire agency radio broadcasts while at the same time providing the most essential daily weather information. Any Red Flag Warning or Fire Weather Watch headlines shown in the ECCDA Forecast Summaries are linked to the actual watch or warning product. All forecast segments within an ECCDA are listed at the beginning of the forecast and can be mouse clicked to jump immediately to that segment.

2. Training

Meteorological training can be provided by both NWS and Predictive Services (PS). The NWS forecast offices primarily handle local courses that occur within their area of responsibility. Predictive Services' primary role is with regional and national level courses.

Requests for training from NWS offices should be directed to that office's Fire Weather focal point or the Meteorologist-In-Charge. If the office is not able to provide an instructor for a course, that office will assume the responsibility for finding an instructor. Requests for training from the PS units should be directed to the Training Coordinator or PS program manager. In all cases, sufficient advance notice (≥ six weeks whenever possible) should be given to allow for scheduling and proper preparation.

Costs incurred by NWS in providing training assistance (other than salary costs for a normal non-holiday weekday) will be borne by the requesting agency. Costs incurred by PS instructors are covered in their annual budget, without need for reimbursement. Below is a table outlining the instructor availability for 2013:

Name Of Office	Instructors qualified to teach S-190, S-290	**Other Classes** that the listed office has at least one meteorologist qualified to instruct in
Redding Predictive Services	Brenda Belongie John Snook Steve Leach Basil Newmerzhycky	S-390, S-490, S-491, RX-410 WIMS, S-144, ECCO, RX-341
Riverside Predictive Services	Tom Rolinski Rob Krohn	S-390, S-490, S-491, WIMS
Eureka	Jeff Tonkin Nancy Dean	S-390, S-490, S-590
Hanford	Cindy Bean Dan Harty	S-390, RX-300
Las Vegas	Jim Harrison Mike Staudenmaier	S-390
Medford	Frederic Bunnag Dennis Gettman Brett Lutz	S-390, S-490
Monterey	Ryan Walbrun Matt Mehle	S-390, S-490
Oxnard	Rich Thompson Dave Gomberg	S-390, S-490
Phoenix	Valerie Meyers	S-390, S-490
Reno	Alex Hoon Rhett Milne James Wallmann	S-390
Sacramento	Mike Smith Jason Clapp	S-390, S-490, S-590, RX-300
San Diego	Stefanie Sullivan	S-390, S-490

3. Coordination Conference Calls

Coordination conference calls will be conducted, as needed, between the PS units and the WFOs during fire season. **See the document titled "Predictive Services Coordination Calls in the appendix section.**

4. WIMS IDs for NFDRS Stations

All NFDRS observation stations are assigned a six-digit station identification number for use in WIMS. The Northern California or Southern California PS units must be contacted for assignment of a six-digit number for any new station, or for any changes in location made to existing stations that already have a WIMS ID number. The PS units will notify the NWS of any new or relocated NFDRS stations.

Contact Information

NORTHERN CALIFORNIA PSU/PREDICTIVE SERVICES UNIT
6101 Airport Road, Redding, CA 96002-9423
FAX Number: (530) 226-2742
Web Site Address: http://gacc.nifc.gov/oncc/predictive/weather/index.htm
Office E-mail: redding.fwx@fire.ca.gov
Office Hours: Fire season: 7am–5pm daily. Low season: 7am – 5pm M-F

Name	**Position**
John Snook	USFS GACC Meteorologist/PS Unit Mgr.
Cathy Johnson	Fire Intelligence Coordinator
Brendan Neylon	Fire Intelligence Officer
Russ Gripp	NFDRS/WIMS/RAWS Lead
Basil Newmerzhycky	USFS GACC Meteorologist
Brenda Belongie	USFS GACC Meteorologist
Steve Leach	BLM GACC Meteorologist

SOUTHERN CALIFORNIA PREDICTIVE SERVICES UNIT
2524 Mulberry Street, Riverside, CA 92501-2200
FAX Number: (951) 276-6439
Web Site Address: http://gacc.nifc.gov/oscc/predictive/weather/index.htm
Office E-mail: riverside.fwx@fire.ca.gov
Office Hours: Fire season: 7am–5pm daily. Low season: 7am – 5pm M-F

Name	**Position**
Tom Rolinski	USFS GACC Meteorologist/PS Unit Mgr.
Matt Shameson	USFS GACC Meteorologist
Rob Krohn	USFS GACC Meteorologist
Bruce Risher	Intelligence Coordinator
Vince Cohee	Intelligence Officer

EUREKA NWS WEATHER FORECAST OFFICE
300 Startare Drive, Eureka, CA 95501-6000
FAX Number: (707) 443-6195
Web Site Address: http://www.weather.gov/eureka
Backup Offices: WFO Monterey and WFO Medford

Name	Position
Jeff Tonkin	Fire Weather Program Mgr/IMET
Alexander Dodd	IMET (Trainee)
Troy Nicolini	Warning Coord. Meteorologist
Nancy Dean	Meteorologist-In-Charge

HANFORD/SAN JOAQUIN VALLEY NWS WEATHER FORECAST OFFICE
900 Foggy Bottom Road, Hanford, CA 93230-5236
FAX Number: (559) 584-1152
Web Site Address: http://www.weather.gov/hanford
Backup Office: WFO Sacramento

Name	Position
Cindy Bean	Fire Weather Program Mgr/
Dan Harty	IMET
Jim Dudley	IMET (Trainee)
James Brotherton	Warning Coord. Meteorologist
Steve Mendenhall	Meteorologist-In-Charge

LAS VEGAS NWS WEATHER FORECAST OFFICE
7851 S. Dean Martin Dr., Las Vegas, NV 89139-6628
FAX Number: (702) 263-9759
Web Site Address: http://www.weather.gov/lasvegas
Backup Offices: WFO Reno and WFO Elko

Name	Position
Jim Harrison	Fire Weather Program Mgr/
Andy Gorelow	IMET (Trainee)
Daniel Berc	Warning Coord. Meteorologist
Todd Lericos	Meteorologist-In-Charge

LOS ANGELES/OXNARD NWS WEATHER FORECAST OFFICE
520 N. Elevar Street, Oxnard, CA 93030
FAX Number: (805) 988-6613
Web Site Address: http://www.weather.gov/losangeles
Backup Office: WFO San Diego

Name	Position
Dave Gomberg	Fire Weather Program Mgr
Rich Thompson	IMET/ Asst. Program Manager
Eric Boldt	Warning Coord. Meteorologist
Mark Jackson	Meteorologist-in-Charge

MEDFORD NWS WEATHER FORECAST OFFICE
4003 Cirrus Drive, Medford, OR 97504
FAX Number: (541) 776-4333
Web Site Address: http://www.weather.gov/medford
Backup Office: WFO Eureka

Name	Position
Frederic Bunnag	Fire Weather Program Mgr/IMET
Brett Lutz	IMET
Shad Keene	IMET Trainee
Ryan Sandler	Warning Coord. Meteorologist
John Lovegrove	Meteorologist-In-Charge

PHOENIX NWS WEATHER FORECAST OFFICE
PAB 500, P.O. Box 52025, Phoenix, AZ 85072-2025
FAX Number: (602) 267-8051
Web Site Address: http://www.weather.gov/phoenix
Backup Office: WFO Tucson

Name	Position
Valerie Meyers	Fire Weather Program Mgr/IMET
Ken Waters	Warning Coord. Meteorologist
Gary Woodall	Meteorologist-In-Charge

RENO NWS WEATHER FORECAST OFFICE
2350 Raggio Parkway, Reno, NV 89512-3900
FAX Number: (775) 673-8110
Web Site Address: http://www.weather.gov/reno
Backup Office: WFO Elko

Name	Position
Alex Hoon	Fire Weather Program Mgr/IMET
James Wallmann	IMET
Chris Smallcomb	Warning Coord. Meteorologist
Jon Mittelstadt	Meteorologist-In-Charge

SACRAMENTO NWS WEATHER FORECAST OFFICE
3310 El Camino Ave, Room 228, Sacramento, CA 95821
FAX Number: (916) 979-3052
Web Site Address: http://www.weather.gov/sacramento
Backup Office: WFO San Joaquin Valley/Hanford

Name	Position
Jason Clapp	Fire Weather Program Mgr/IMET
Mike Smith	IMET
Michelle Mead	Warning Coord. Meteorologist
Dan Keeton	Meteorologist-In-Charge

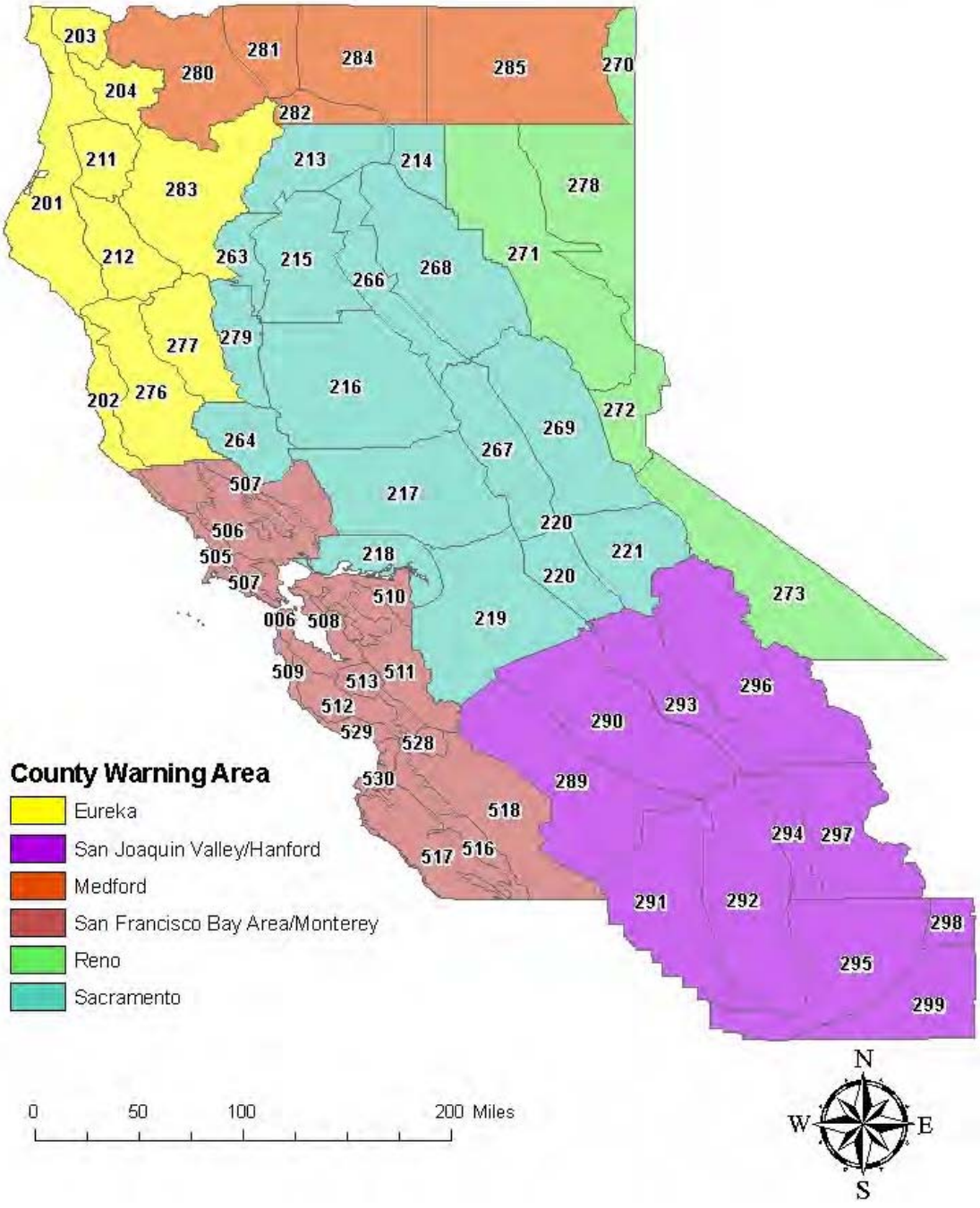
SAN DIEGO NWS WEATHER FORECAST OFFICE
11440 W. Bernardo Ct, Ste 230, San Diego, CA 92127
FAX Number: (858) 675-8717 or 8712
Web Site Address: http://www.weather.gov/sandiego
Service Backup Office: WFO Los Angeles/Oxnard

Name	Position
Stefanie Sullivan	Fire Weather Program Mgr/IMET
Alex Tardy	Warning Coord. Meteorologist
Roger Pierce	Meteorologist-In-Charge

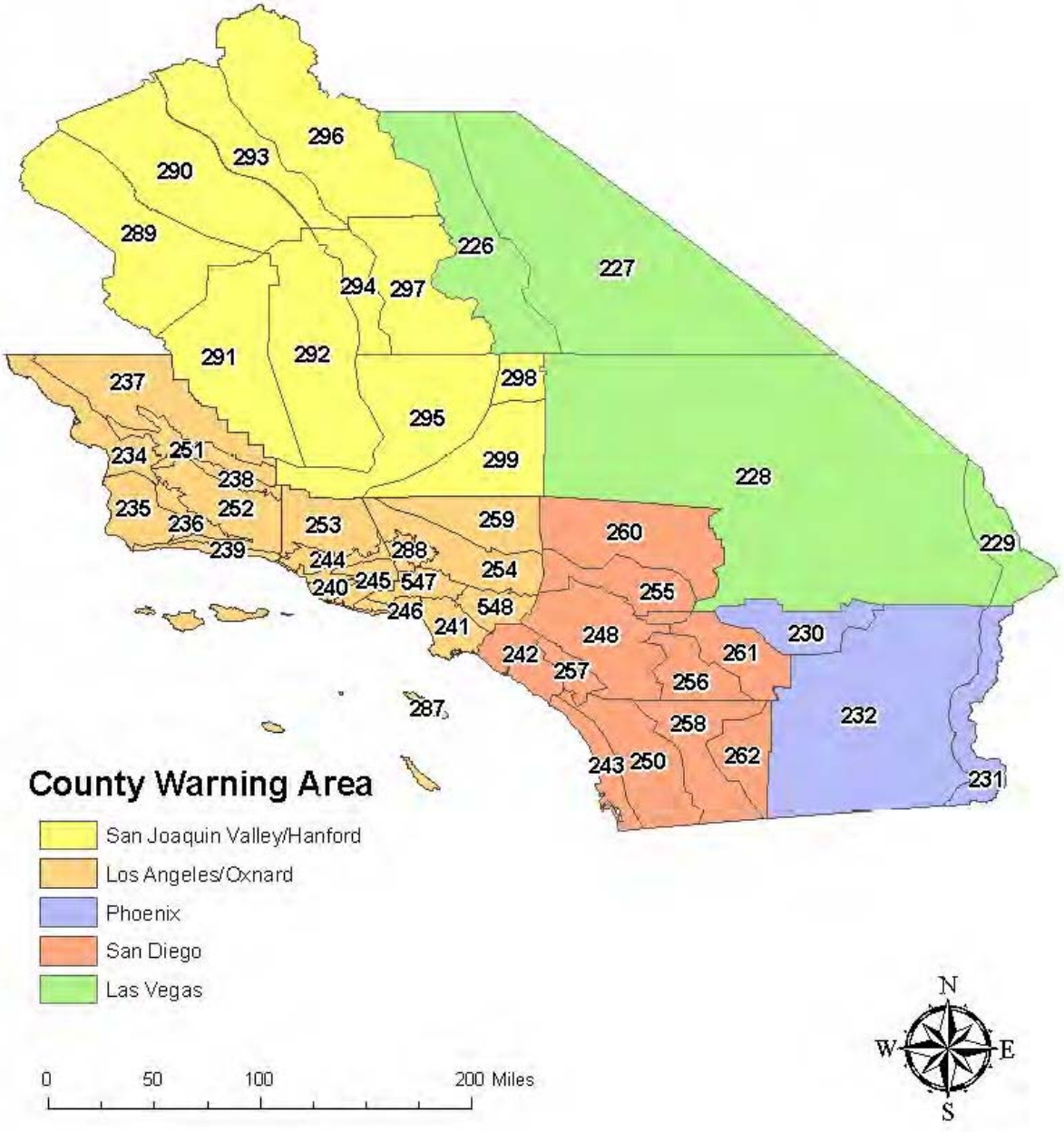
SAN FRANCISCO BAY AREA/MONTEREY NWS WEATHER FORECAST OFFICE
21 Grace Hopper Ave, Stop 5, Monterey, CA 93943
FAX Number: (831) 656-1747
Web Site Address: http://www.wrh.noaa.gov/sanfrancisco
Service Backup Office: WFO Los Angeles/Oxnard

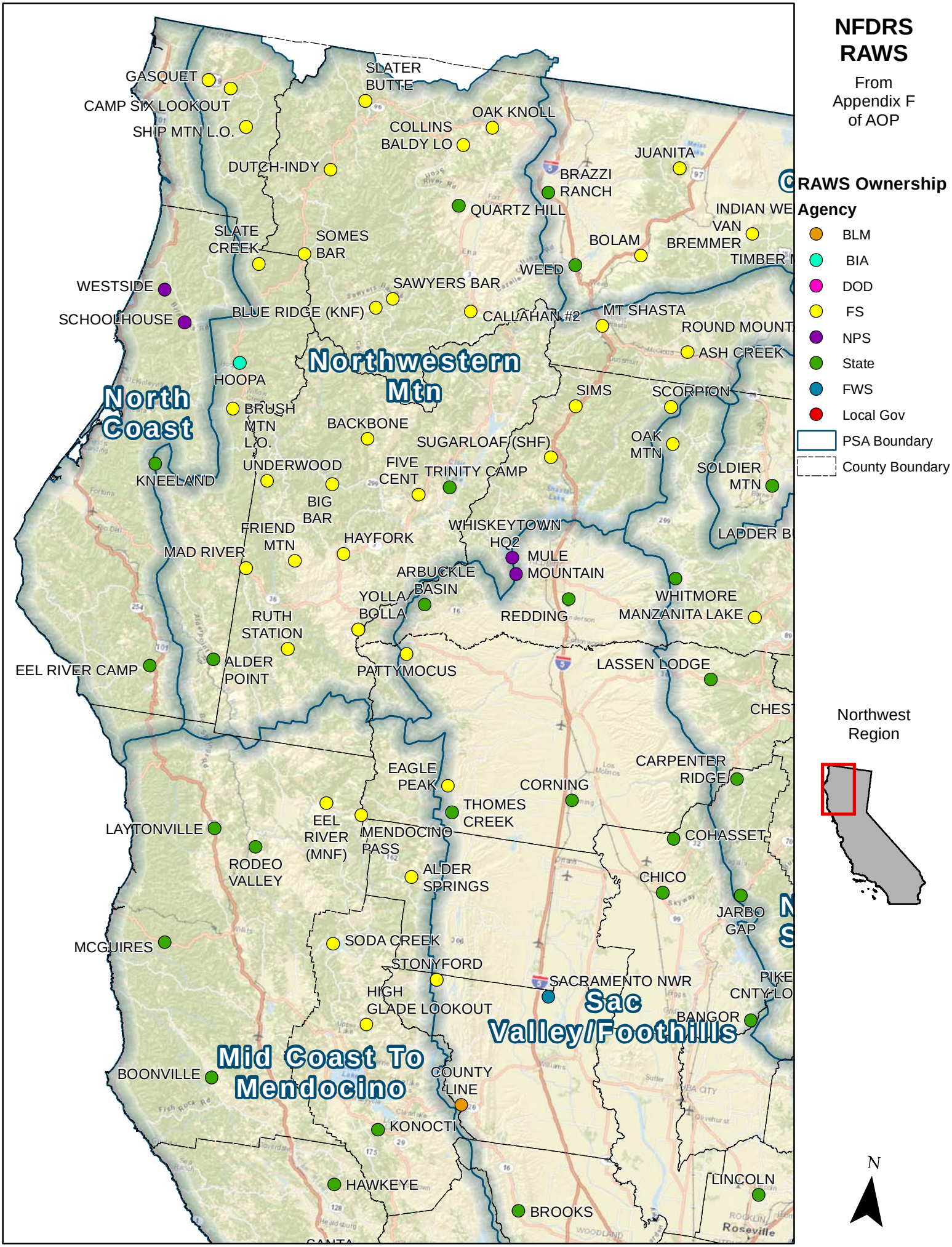
Name	Position
Ryan Walbrun	Fire Weather Program Mgr/IMET
Matt Mehle	IMET
Logan Johnson	Warning Coord. Meteorologist
Kevin Baker	Meteorologist-In-Charge

Northern California Fire Weather Zones



Southern California Fire Weather Zones




NFDRS
RAWS
From
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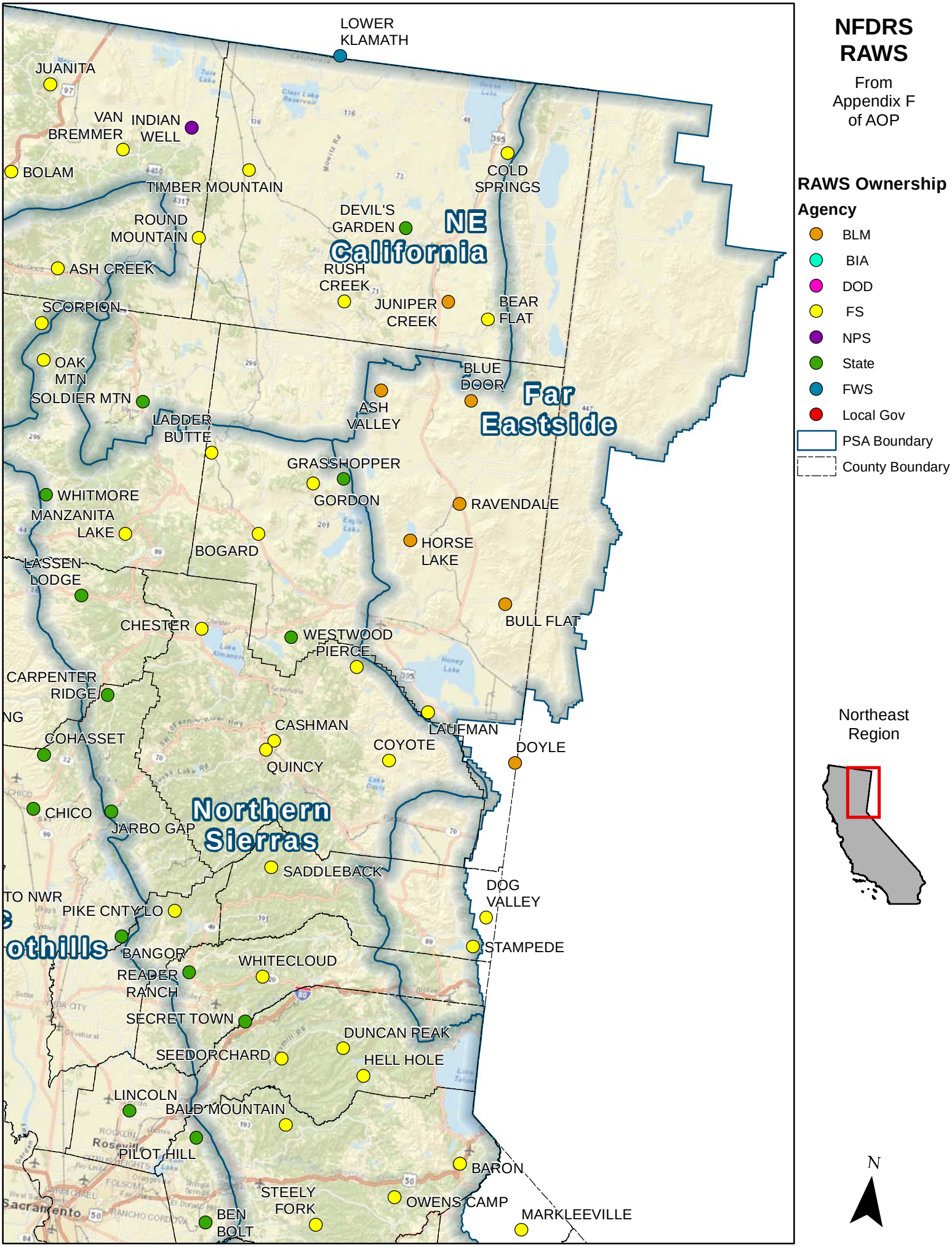
of AOP
RAWS Ownership
Agency
BLM
BIA
DOD
FS
NPS
State
FWS
Local Gov
PSA Boundary
County Boundary
Northwest
Region
N
GASQUET
CAMP SIX LOOKOUT
SHIP MTN L.O.
SLATER
BUTTE
COLLINS
BALDY LO
OAK KNOLL
DUTCH-INDY
JUANITA
BRAZZI
RANCH
QUARTZ HILL
INDIAN WE
VAN
BREMMER
TIMBER
BOLAM
SLATE
CREEK
SOMES
BAR
WEED
WESTSIDE
SAWYERS BAR
SCHOOLHOUSE
BLUE RIDGE (KNF)
CALLAHAN #2
MT SHASTA
ROUND MOUNT
ASH CREEK
Northwestern
Mtn
HOOPA
North
Coast
BRUSH
MTN
L.O.
BACKBONE
SIMS
SCORPION
SUGARLOAF (SHF)
OAK
MTN
KNEELAND
UNDERWOOD
FIVE
CENT
TRINITY CAMP
SOLDIER
MTN
BIG
BAR
FRIEND
MTN
HAYFORK
WHISKEYTOWN
HQ2
LADDER B
MAD RIVER
MULE
MOUNTAIN
ARBUCKLE
BASIN
YOLLA
BOLLA
WHITMORE
REDDING
MANZANITA LAKE
RUTH
STATION
EEL RIVER CAMP
ALDER
POINT
PATTYMOCUS
LASSEN LODGE
CHES
CARPENTER
RIDGE
EAGLE
PEAK
CORNING
THOMES
CREEK
EEL
RIVER
(MNF)
MENDOCINO
PASS
LAYTONVILLE
COHASSET
RODEO
VALLEY
ALDER
SPRINGS
CHICO
JARBO
GAP
MCGUIRES
SODA CREEK
STONYFORD
SACRAMENTO NWR
PIKE
CNTY LO
HIGH
GLADE LOOKOUT
Sac
Valley/Foothills
BANGOR
Mid Coast To
Mendocino
BOONVILLE
COUNTY
LINE
KONOCTI
HAWKEYE
BROOKS
LINCOLN
Roseville



NFDRS RAWS

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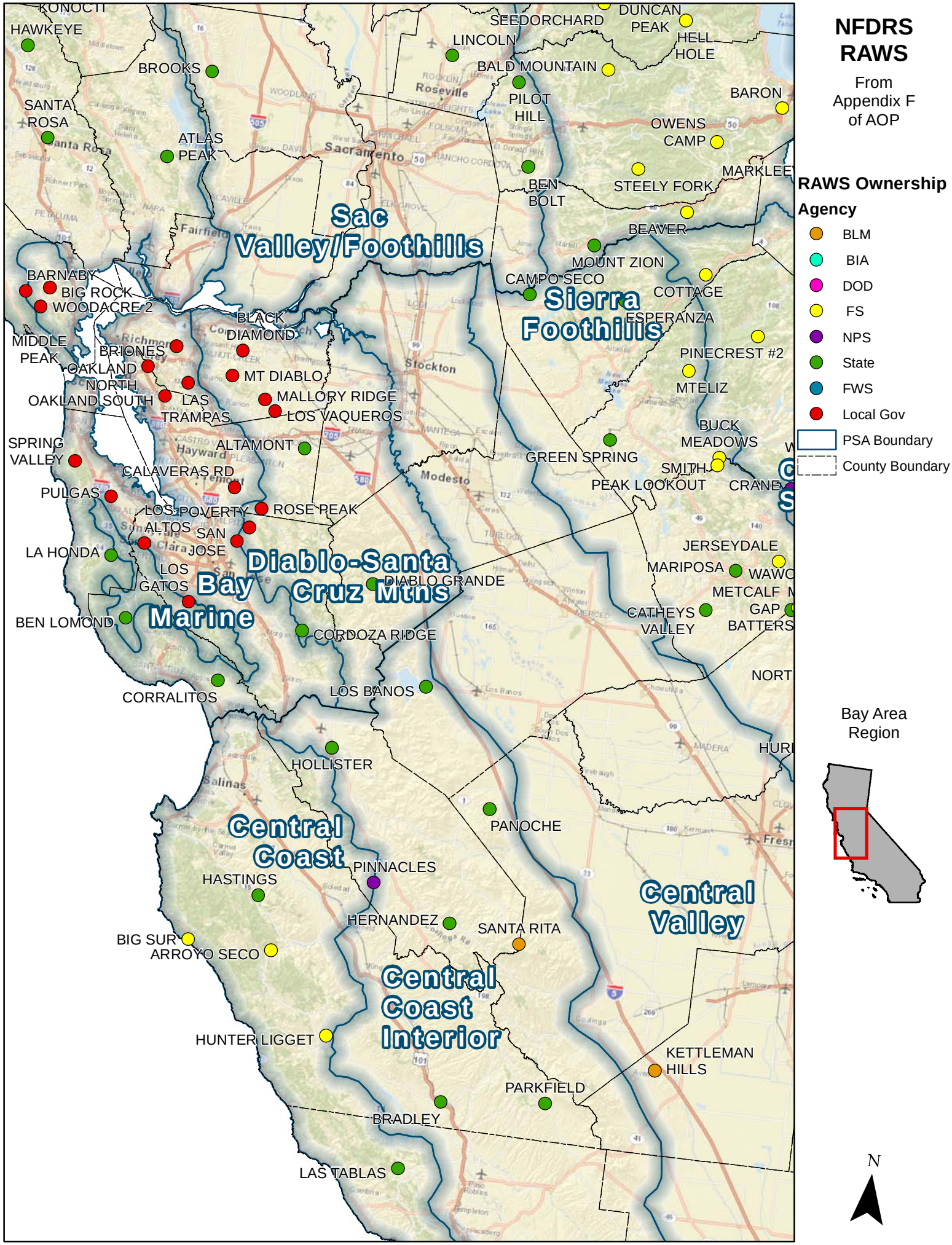
RAWS Ownership

Agency

- BLM
- BIA
- DOD
- FS
- NPS
- State
- FWS
- Local Gov
- PSA Boundary
- County Boundary

Northeast Region

N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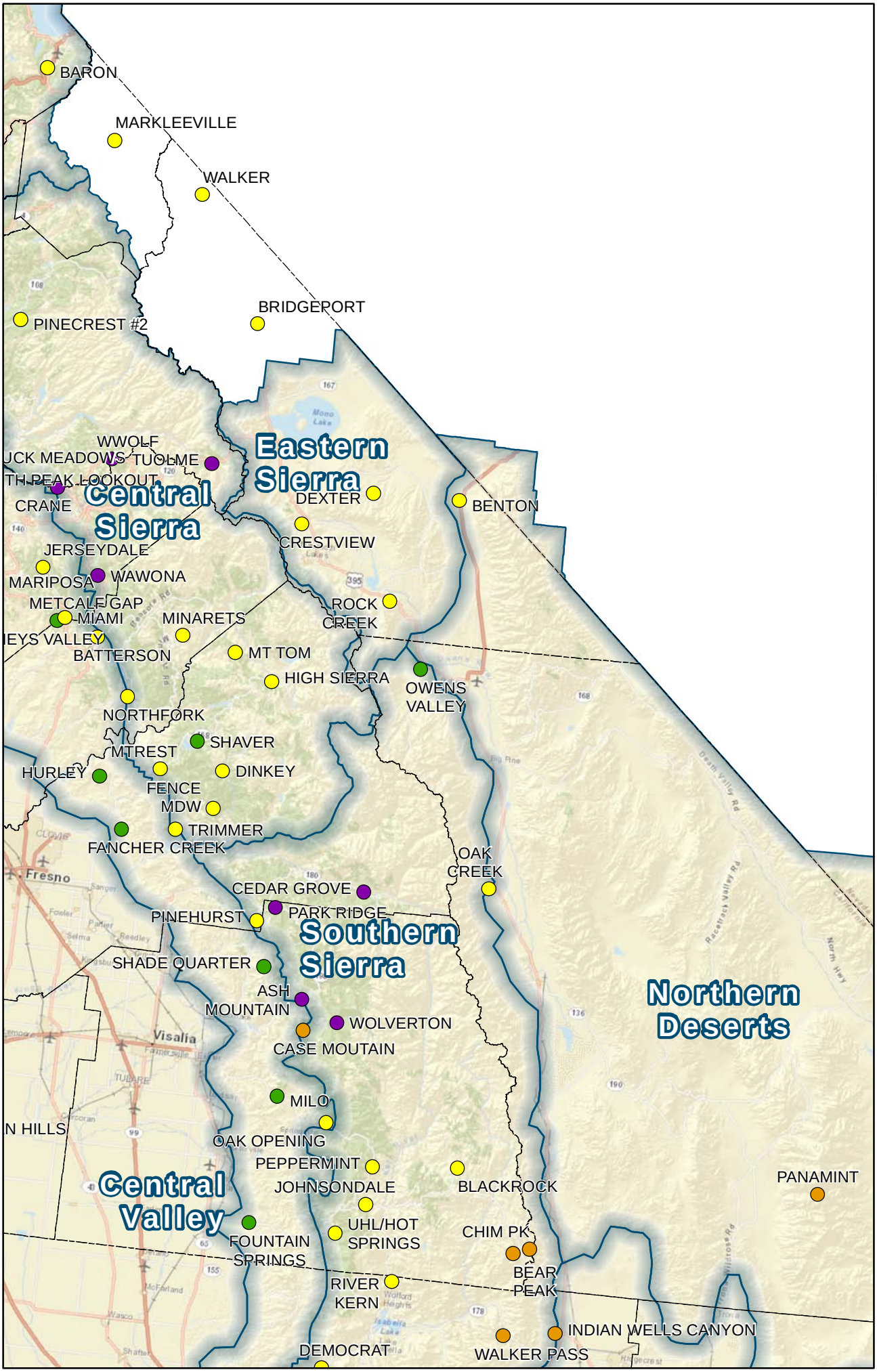
BLM
BIA
DOD
FS
NPS
State
FWS
Local Gov
PSA Boundary
County Boundary
Bay Area Region
N
Sac Valley/Foothills
Sierra Foothills
Diablo-Santa Cruz Mtns
Bay Marine
Central Coast
Central Coast Interior
Central Valley
KONOCTI
HAWKEYE
BROOKS
SANTA ROSA
ATLAS PEAK
SEEDORCHARD
LINCOLN
DUNCAN PEAK
HELL HOLE
BALD MOUNTAIN
PILOT HILL
BARON
OWENS CAMP
MARKLEE
STEELY FORK
BEN BOLT
BEAVER
MOUNT ZION
CAMPO SECO
COTTAGE
ESPERANZA
PINECREST #2
MTELIZ
BUCK MEADOWS
GREEN SPRING
SMITH
PEAK LOOKOUT
CRANEY
BARNABY
BIG ROCK
WOODACRE 2
BLACK DIAMOND
MIDDLE PEAK
BRIONES
OAKLAND NORTH
OAKLAND SOUTH
LAS TRAMPAS
MT DIABLO
MALLORY RIDGE
LOS VAQUEROS
ALTAMONT
SPRING VALLEY
CALAVERAS RD
PULGAS
LOS POVERTY
ROSE PEAK
ALTOS
SAN JOSE
LA HONDA
LOS GATOS
DIABLO GRANDE
BEN LOMOND
CORDOZA RIDGE
CORRALITOS
LOS BANOS
JERSEYDALE
MARIPOSA
WAWO
METCALF
GAP
CATHEYS VALLEY
BATTERS
NORT
HOLLISTER
PANOCHE
HURI
PINNACLES
HASTINGS
HERNANDEZ
SANTA RITA
BIG SUR
ARROYO SECO
HUNTER LIGGET
KETTLEMAN HILLS
PARKFIELD
BRADLEY
LAS TABLAS



NFDRS RAWS

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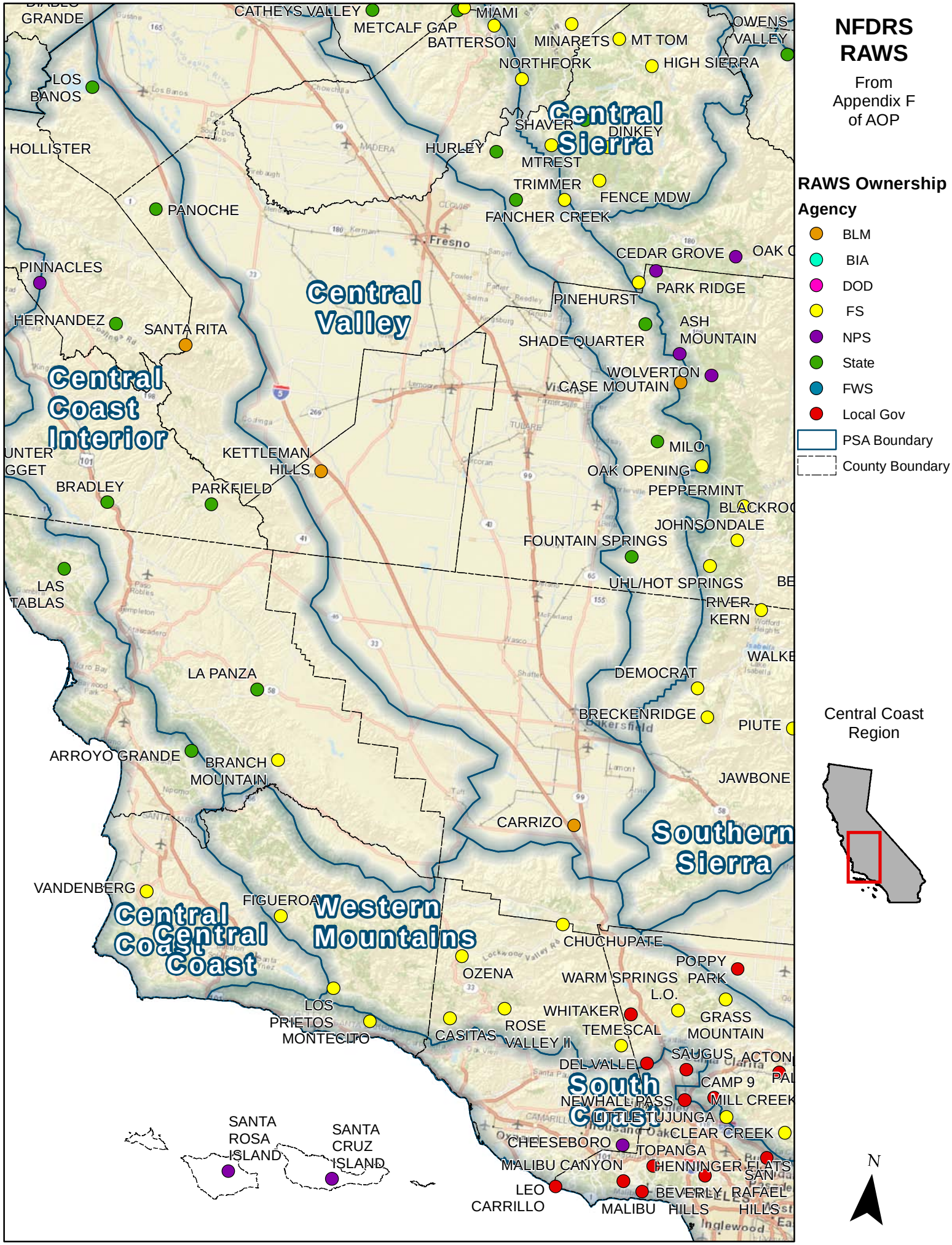
RAWS Ownership

Agency

- BLM
- BIA
- DOD
- FS
- NPS
- State
- FWS
- Local Gov
- PSA Boundary
- County Boundary

South Sierra Region

N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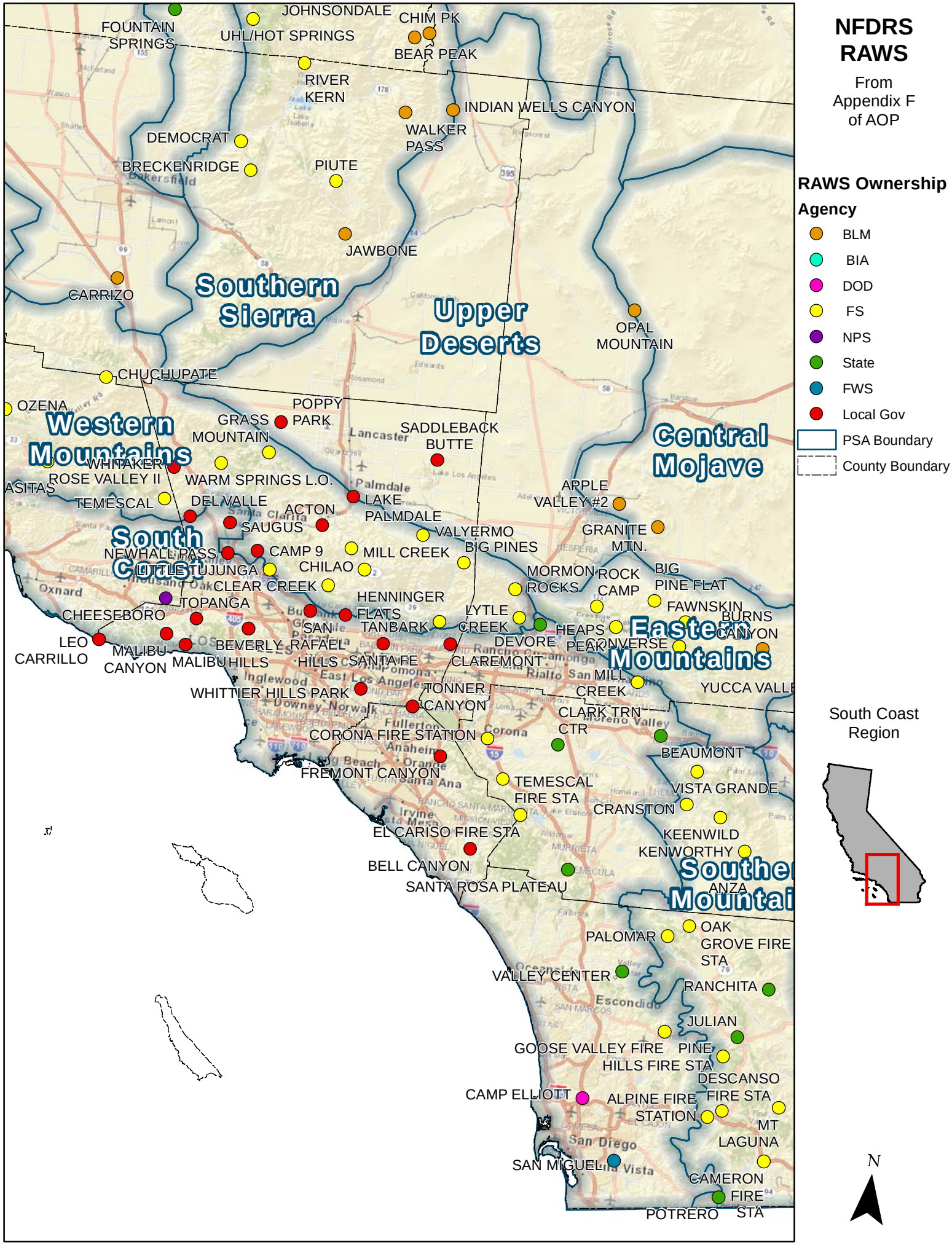
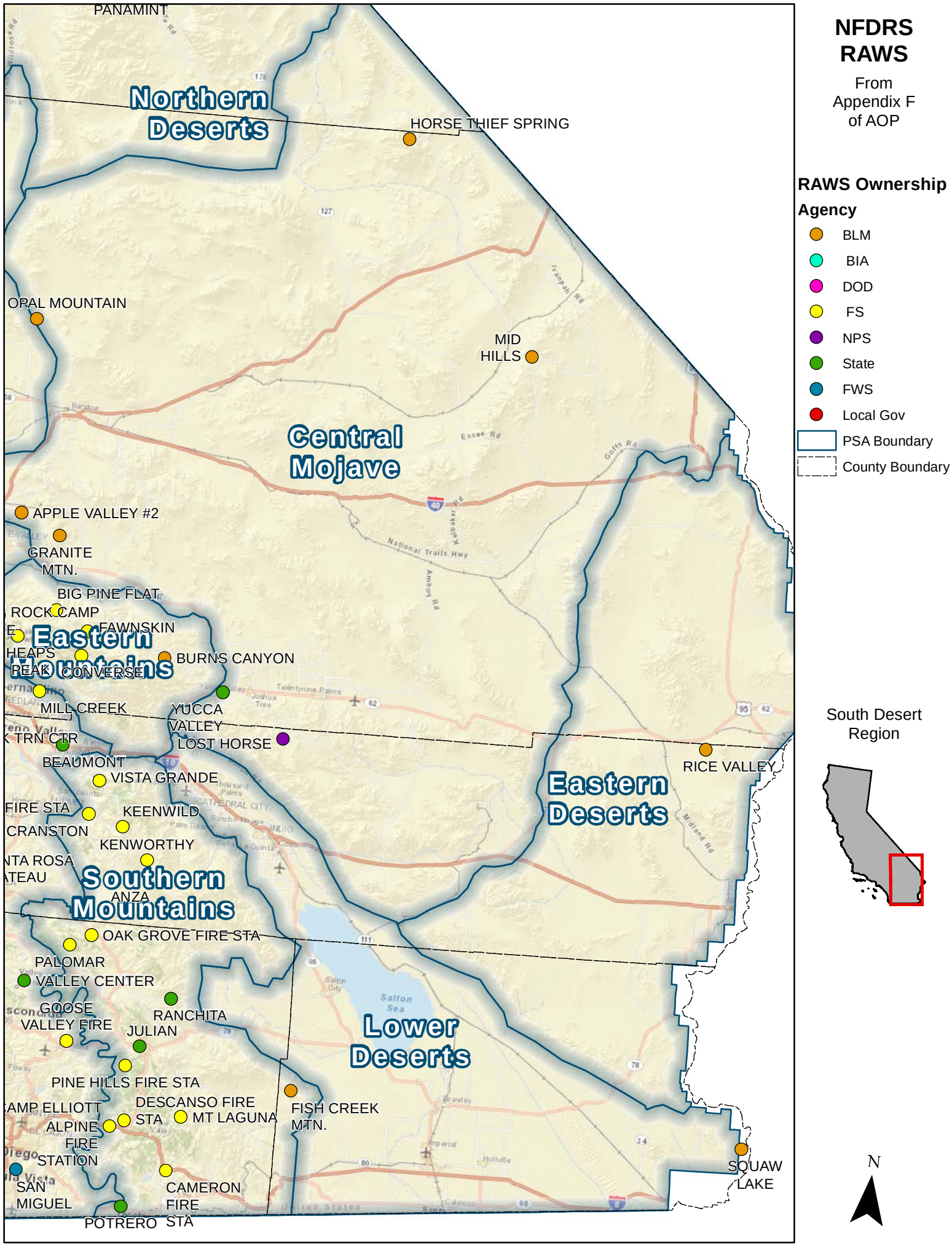
PSA Boundary
County Boundary
Central Coast Region
N
Central Sierra
Central Valley
Central Coast Interior
Southern Sierra
Western Mountains
Central Coast
Central Coast
South Coast
CATHEYS VALLEY
METCALF GAP
MIAMI
BATTERSON
MINARETS
MT TOM
OWENS VALLEY
NORTHFORK
HIGH SIERRA
LOS BANOS
SHAVER
DINKEY
HOLLISTER
HURLEY
MTREST
TRIMMER
FENCE MDW
PANOCHE
FANCHER CREEK
CEDAR GROVE
PINNACLES
PARK RIDGE
PINEHURST
HERNANDEZ
SANTA RITA
ASH MOUNTAIN
SHADE QUARTER
WOLVERTON
CASE MOUTAIN
KETTLEMAN HILLS
MILO
OAK OPENING
BRADLEY
PARKFIELD
PEPPERMINT
JOHNSONDALE
FOUNTAIN SPRINGS
LAS TABLAS
UHL/HOT SPRINGS
RIVER KERN
LA PANZA
DEMOCRAT
BRECKENRIDGE
PIUTE
ARROYO GRANDE
BRANCH MOUNTAIN
JAWBONE
CARRIZO
VANDENBERG
FIGUEROA
CHUCHUPATE
POPPY PARK
OZENA
WARM SPRINGS
L.O.
LOS PRIETOS
MONTECITO
WHITAKER
GRASS MOUNTAIN
CASITAS
ROSE VALLEY
TEMESCAL
SAUGUS
ACTON
DEL VALLE
CAMP 9
NEWHALL PASS
MILL CREEK
LITTLE TUJUNGA
CLEAR CREEK
SANTA ROSA ISLAND
SANTA CRUZ ISLAND
CHEESEBORO
TOPANGA
MALIBU CANYON
HENNINGER FLATS
LEO CARRILLO
BEVERLY HILLS
RAFAEL HILLS
MALIBU


NFDRS RAWS
From Appendix F of AOP
RAWS Ownership
Agency
BLM
BIA
DOD
FS
NPS
State
FWS
Local Gov
PSA Boundary
County Boundary
Southern Sierra
Upper Deserts
Western Mountains
Central Mojave
South Coast
Eastern Mountains
Southern Mountains
South Coast Region
N
FOUNTAIN SPRINGS
JOHNSONDALE
UHL/HOT SPRINGS
CHIM PK
BEAR PEAK
RIVER KERN
INDIAN WELLS CANYON
WALKER PASS
DEMOCRAT
BRECKENRIDGE
PIUTE
JAWBONE
CARRIZO
OPAL MOUNTAIN
CHUCHUPATE
OZENA
POPPY PARK
GRASS MOUNTAIN
SADDLEBACK BUTTE
WHITAKER
ROSE VALLEY II
WARM SPRINGS L.O.
ASITAS
TEMESCAL
DEL VALLE
ACTON
LAKE PALMDALE
APPLE VALLEY #2
SAUGUS
VALYERMO
BIG PINES
GRANITE MTN.
NEWHALL PASS
CAMP 9
MILL CREEK
CHILAO
LITTLE TUJUNGA
CLEAR CREEK
MORMON ROCKS
ROCK CAMP
BIG PINE FLAT
HENNINGER FLATS
TOPANGA
LYTLE CREEK
FAWNSKIN
BURNS CANYON
CHEESEBORO
SAN TANBARK
HEAPS PEAK
DEVORE
CONVERSE
LEO CARRILLO
MALIBU CANYON
BEVERLY HILLS
RAFAEL
MALIBU HILLS
SANTA FE
CLAREMONT
MILL CREEK
YUCCA VALLE
WHITTIER HILLS PARK
TONNER CANYON
CLARK TRN CTR
CORONA FIRE STATION
BEAUMONT
FREMONT CANYON
TEMESCAL FIRE STA
VISTA GRANDE
CRANSTON
EL CARISO FIRE STA
KEENWILD
KENWORTHY
BELL CANYON
SANTA ROSA PLATEAU
ANZA
PALOMAR
OAK GROVE FIRE STA
VALLEY CENTER
RANCHITA
JULIAN
GOOSE VALLEY FIRE
PINE HILLS FIRE STA
DESCANSO FIRE STA
CAMP ELLIOTT
ALPINE FIRE STATION
MT LAGUNA
SAN MIGUEL
CAMERON FIRE STA
POTRERO


NFDRS
RAWS
From
Appendix F
of AOP
RAWS Ownership
Agency
BLM
BIA
DOD
FS
NPS
State
FWS
Local Gov
PSA Boundary
County Boundary
Northern
Deserts
Central
Mojave
Eastern
Mountains
Eastern
Deserts
Southern
Mountains
Lower
Deserts
South Desert
Region
PANAMINT
HORSE THIEF SPRING
OPAL MOUNTAIN
MID
HILLS
APPLE VALLEY #2
GRANITE
MTN.
BIG PINE FLAT
ROCK CAMP
FAWNSKIN
HEAPS
PEAK
CONVERSE
BURNS CANYON
MILL CREEK
YUCCA
VALLEY
LOST HORSE
TRN CTR
BEAUMONT
VISTA GRANDE
RICE VALLEY
FIRE STA
KEENWILD
CRANSTON
KENWORTHY
NTA ROSA
ATEAU
ANZA
OAK GROVE FIRE STA
PALOMAR
VALLEY CENTER
GOOSE
VALLEY FIRE
RANCHITA
JULIAN
PINE HILLS FIRE STA
CAMP ELLIOTT
DESCANSO FIRE
STA
MT LAGUNA
FISH CREEK
MTN.
ALPINE
FIRE
STATION
SAN
MIGUEL
CAMERON
FIRE
STA
POTRERO
SQUAW
LAKE
N

STATION NAME WIMS	WIMS ID	AGENCY	UNIT	FCST ZONE	LATITUDE	LONGITUDE	ELEV	Remarks
ALPINE FIRE STATION	45701	FS	CNF	509	32.8367	-116.6714	2810	Station moved in March 2013
AMMO DUMP	45738	DOD	MCP	508	33.381944	-117.285555	1068	Not managed for NFDRS
ANZA	45616	State	RRU	513	33.555861	-116.674528	3939	
APPLE VALLEY #2	45134	BLM	CDD	514	34.592586	-117.168303	3159	2013 addition
BEAUMONT	45617	State	RRU	510	33.930499	-116.949917	2604	
BELL CANYON	45735	L Gov	ORC	509	33.551803	-117.572966	764	
BIG PINE FLAT	45102	FS	BDF	511	34.320000	-117.013800	6861	
BURNS CANYON	45125	BLM	CDD	516	34.208333	-116.620833	6000	
CAMERON FIRE STA	45704	FS	CNF	513	32.721189	-116.464669	3264	
CAMP ELLIOTT	45741	DOD	MFD	508	32.859250	-117.105694	539	
CASE SPRINGS	45731	DOD	MCP	508	33.450000	-117.429722	2320	Not currently managed for NFDRS
CLARK TRN CTR	45624	State	RRU	509	33.877166	-117.304111	1637	
CMP TARGET RANGE	45732	DOD	MPC	508	33.372222	-117.3589	917	aka ROBLAR, not currently managed for NFDRS
CONVERSE	45105	FS	BDF	511	34.194059	-116.913112	5618	
CORONA FIRE STATION	45618	FS	CNF	509	33.875622	-117.550872	624	Station moved in March 2013
CRANSTON	45603	FS	BDF	512	33.737458	-116.838158	1930	
DESCANSO FIRE STA	45707	FS	CNF	513	32.857389	-116.622392	3563	
DEVORE	45113	State	BDU	510	34.221083	-117.404333	2057	
EL CARISO FIRE STA	45619	FS	CNF	509	33.663753	-117.411988	2727	
FAWNSKIN	45101	FS	BDF	511	34.266358	-116.899027	6936	
FREMONT CANYON	45736	L Gov	ORC	509	33.811142	-117.708347	1782	
GOOSE VALLEY FIRE	45724	FS	CNF	509	33.073531	-116.844858	1539	Updated L&L/Elev based on 2010 site visit
HEAPS PEAK	45133	FS	BDF	511	34.234192	-117.140058	6394	
JULIAN	45708	State	MVU	513	33.075639	-116.591750	4238	
KEENWILD	45604	FS	BDF	513	33.708325	-116.716939	4706	
KENWORTHY	45605	FS	BDF	513	33.617125	-116.621714	4562	Portable RAWS at site
LAS FLORES	45733	DOD	MCP	508	33.290000	-117.450000	100	Not currently managed for NFDRS
LITTLE TUJUNGA	45411	FS	ANF	509	34.301388	-118.368333	1390	
LYTLE CREEK	45108	FS	BDF	510	34.234153	-117.480142	2719	
MILL CREEK	45109	FS	BDF	510	34.079832	-117.046761	2511	
MORMON ROCKS	45114	FS	BDF	511	34.316944	-117.503888	3300	
MT LAGUNA	45709	FS	CNF	513	32.881133	-116.428900	5730	
OAK GROVE FIRE STA	45710	FS	CNF	513	33.386169	-116.791450	2767	
PALOMAR	45740	FS	CNF	513	33.352042	-116.862736	5480	
PINE HILLS FIRE STA	45711	FS	CNF	513	33.016642	-116.635401	3647	
POTRERO	45730	State	MVU	513	32.605861	-116.608833	2345	
RANCHITA	45729	State	MVU	513	33.222277	-116.497444	4415	
ROCK CAMP	45111	FS	BDF	511	34.288888	-117.212500	4900	
SAN MIGUEL	45737	FWS	TSR	509	32.686000	-116.978000	425	
SANTA ROSA PLATEAU	45623	State	RRU	513	33.518166	-117.229111	1987	
TALEGA	45739	DOD	MCP	508	33.474722	-117.486666	1203	Not currently managed for NFDRS
TEMESCAL FIRE STA	45611	FS	CNF	509	33.762803	-117.483656	1123	
VALLEY CENTER	45734	State	MVU	509	33.237083	-117.008555	1483	
VALYERMO	45423	FS	ANF	514	34.446666	-117.845000	3700	
VISTA GRANDE	45612	FS	BDF	513	33.836092	-116.811248	4906	
YUCCA VALLEY	45112	State	BDU	516	34.124055	-116.408000	3246	

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